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By the Numbers: Confidence, Consultants, and the Construction of Mass Leisure, 1953-1975

By

James Dalgoff Skee

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

History

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Cathryn Carson, Chair

Professor Kerwin Klein

Professor Greg Castillo

Summer 2016

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Abstract

By the Numbers: Confidence, Consultants, and the Construction of Mass Leisure, 1953-1975

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This dissertation describes how, in the decades after World War II, a new cohort of outside experts helped build confidence among their clients in particular visions of American democratic capitalism. This moment in American history is, as the historian Daniel Horowitz has called it, an era of the “cold war consensus” among social scientists, industry leaders, and policy makers, in the idea that mass affluence would bring social well-being to the many, especially vis-à-vis communism. I add, however, that especially among members of America’s business and financial establishments, there was a lack of confidence in how this particular future could be achieved. Thus, there was an ongoing need to build confidence to move America in new directions that to contemporaries seemed foreign and new, and with no certainty of their ultimate success. As discussed in the historiography section later in this introduction, although historians and other scholars have looked at how modernity, and American democratic capitalism specifically, came to be, including its social, cultural, economic, and political configurations, there has been little exploration into the role of for-profit professional services firms in this story. This dissertation also complicates our narratives of the Cold War military-industrial complex by adding new actors to a familiar casts of characters. This dissertation also describes the expansion of quantification and rationality in American social life, especially in the contexts of business, banking, and government. It is about the role and meaning of “economics” outside the halls of academia and government. Lastly, this provides insight into the meaning of objectivity over the 1950s through 1970s, and how that played out in the formation of new professional identities.

To explore these concerns, I look at several instances of constructing mass leisure in the United States. These include: the location and feasibility studies for Disneyland completed by Stanford Research Institute (SRI) in 1953 and 1954, discussed in Chapter 1; construction and operations planning completed by SRI and ERA for the 1962 Seattle World’s Fair, also known as the Century 21 Exposition, in Chapter 2; the use of outside advisors by the non-profit New York World's Fair 1964-65 Corporation in Chapter 3; ERA’s role in the development of Audio-Animatronics and other Disney attractions at the 1964-1965 New York World’s Fair in Chapter 4; and finally Miami’s never-built Inter-American Cultural and Trade Center (Interama), discussed in Chapter 5. Taken together, these instances cover the time period from the early

1950s until just before the 1970s energy crisis and Watergate began to corrode the nation's confidence in the idea that mass affluence was sustainable.

The actors in this dissertation are both familiar and unfamiliar. Few have not heard of Walt Disney, but the role of Harrison Price and his firm ERA in the story of Disney's theme parks are rarely found outside of histories documenting particular aspects of the Disney enterprise. Both ERA and PRC were founded by alumni from non-profit research and development firms and other think tanks. But their main line of work straddled to a far greater extent the public/private division than that of their peers at RAND or the federal departments of the executive branch. Arthur D. Little, Inc., of Cambridge, Massachusetts, is a key actor in the story of industrial research & development in the United States and the history of operations research, but the firm's work on projects of mass leisure (including the 1964-1965 New York World's Fair and Miami's Interama) is little known. The significance of this work in mass leisure is not simply that it is outside of the area explored by scholars. Besides Price, many of these men went on to become key figures in domestic and international development. Some of the very first projects they worked on were in mass leisure, and in very real ways this early work shaped their later careers. Disneyland, Century 21, and New York's "Olympics of Progress" (as Robert Moses called the 1964-1965 New York World Fair) were the crucibles in which these consultants learned how to apply their trades.

This dissertation takes the perspective that what mattered the most to their clients was in the ability of these outside advisors to act as prognosticators of the future. While their successes in these efforts did matter (or at the very least, how they presented and explained their past successes and failures), it was their abilities to perform as virtuosos in quantitative methods and to mediate between the worlds of banking, government, industry, and the design professions which mattered the most. They performed as objective counsel, and used a range of methods from statistics to operations research and systems analysis. Some called themselves industrial engineers. Others identified as industrial economists, land economists, or recreational economists. There was never one fixed professional identity among them. They were on the whole, however, not academic economists concerned with theory. The trade of these men was entirely in applied research. Methods they used ran the gamut from statistical analysis to linear programming to computer simulations. What drove demand for their services among their clients in mass leisure was the need to build confidence in the postwar's highly capitalized, financially risky, and otherwise unproven ventures among a diverse set of interests, both public and private. The value of consultants such as Price to clients lay chiefly in their role as depoliticized actors, and it was their public performances of objectivity which made them appear neutral. Indeed, objectivity was one of the chief products they sold, packaged as a service.

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Introduction From Abuja to Disneyland

“You and I are both con men, Buzz, but we deliver the goods.”

–C. V. Wood, former manager of Stanford Research Institute’s Southern California office 1951-1953, to Harrison “Buzz” Price, founder of Economics Research Associates.¹

In the summer of 1975, the Federal Military Government (FMG) of Nigeria announced plans its to build a new federal capital city to be named Abuja (Figure 0.1). The new city would replace coastal Lagos not only as an administrative center, but also an economic one. Plans to relocate the capital from the coastal city of Lagos dated back to colonial times. But was not until the mid 1970s when, flush with oil money and with a strong, military government in control that the project moved forward. Many in Nigeria’s government and academic circles saw the capital project as a means of not only establishing unity in a nation of great cultural and geographic differences, but also as a way to address Lagos’s overcrowding and seeming resilience against earlier attempts at urban renewal. A government panel recommended a general area in the nation’s interior for the new capital, but it did not go so far as to name a specific site, suggesting instead that outside experts answer that question.²

The “experts” that Nigeria’s FMG turned to came from International Planning Associates (IPA). IPA was a consortium of three American firms: ArchiSystems of Van Nuys, California; Wallace, McHarg, Roberts & Todd of Philadelphia; and Planning Research Corporation (PRC) of McLean, Virginia.³ Of the three, PRC is especially notable. The firm was a massive conglomerate, which up through the early 1970s had embarked on an aggressive program of acquiring other smaller firms. By the time of the Abuja announcement, it was the largest professional services firm in the world, employing more than 6500 professionals from 100 disciplines, working in 250 offices located in 40 countries. PRC’s annual revenue was \$150 million in 1976 dollars, and the company was listed on the New York Stock Exchange. PRC’s specialty was, as its name suggests, in planning. Its consultants utilized the latest methods in the “information and management sciences including systems analysis, data processing and management consulting....” Its corporate organization and dozens of divisions having their own specialized practices enabled PRC to engage in the “management of large-scale economic development projects.”⁴

This expertise made PRC and the other two firms that made up IPA the ideal proxy of confidence for the Nigerians, who wished to model their new capital after American cities and suburbs.⁵ This was a tall task. As one board member of PRC remarked, Nigeria was “a complex nation of 250 different religious, ethnic, cultural and language groups. The people vary greatly

¹ Harrison Price, *Walt's Revolution!: By the Numbers* (Orlando, FL: Ripley Entertainment, 2004), 131.

² “Statement of Harrison A. Price,” Folder 56, Box 137, Harrison A. Price papers, Special Collections, University of Central Florida (hereafter “HAP”). On Abuja, Nigeria, and plans to relocate the capital, see Daniel Immerwahr, “The Politics of Architecture and Urbanism in Postcolonial Lagos, 1960-1986,” *Journal of African Cultural Studies* 19, no. 2 (2007), Jonathan Moore, “The Political History of Nigeria’s New Capital,” *The Journal of Modern African Studies* 22, no. 1 (1984), Ann Genova, “Oil and Nationalism in Nigeria, 1970-1980” (The University of Texas at Austin, 2007).

³ “Statement of Harrison A. Price,” n.d., Folder 56, Box 137, Series VIII, HAP.

⁴ International Planning Associates (IPA), Folder 56, Box 137, HAP.

⁵ Early plans for Abuja are strikingly similar to the layout of Washington, D.C.. Diagonal streets cut across a grid, with a ceremonial area akin to the National Mall running in front of what would become the National Assembly building. See Figure 0.1.

from one part of the country to another, as do climate, rivers, topography and lifestyles. While this diversity contributes to the cultural and historic richness of the nation, it will require sensitivity and skill to plan the capital in such a context.”⁶ Nigeria’s selection of IPA reflected the complexities of that nation, in what they believed were all of its dimensions – from the human to the natural.



Figure 0.1. Plan for Abuja, Nigeria, showing street grid, by International Planning Associates. Source: “Abuja Capital Master Plan,” Wallace Roberts and Todd, accessed June 2, 2016, <http://www.wrtddesign.com/projects/detail/Abuja-Capital-Master-Plan/13>.

Besides PRC’s experience in planning and managing large construction projects, another equally important factor in selecting the consortium was Harrison A. Price. Since the early 1970s, after selling his first firm Economics Research Associates (ERA) to PRC, Price had been actively building PRC’s client base in the developing world.⁷ In addition, Price’s ERA brought to PRC fifteen years’ experience in the area of applied economics.⁸ Price built PRC’s presence in Nigeria and other nations through contacts with bankers who had a history of doing business in those nations.⁹ For Price, the Abuja project was perhaps the biggest crescendo in a career as an applied economist that stretched back to the early 1950s. After serving as an analyst during the

⁶ “Statement of Harrison A. Price,” n.d., Folder 56, Box 137, HAP.

⁷ A.W. Munn to Sir Mobolaji Bank-Anthony, June 27, 1975, Folder 61, Box 137, HAP. Harrison A. Price to Mr. Peter D. Oldham and Mr. Anthony W. Munn, July 28, 1975, Folder 57, Box 137, HAP. Ronald K. Parker to Glen Rockwell, August 16, 1977, Folder 58, Box 137, HAP.

⁸ Harrison A. Price to Walter E. Diggs, May 4, 1970, Seaworld -- Correspondence. 1964, 1970, 1972, 1976-1980, 1996, Box 45, Series VII. HAP.

⁹ A.W. Munn to Sir Mobolaji Bank-Anthony, June 27, 1975, Folder 61 Box 137 HAP Papers. Harrison A. Price to Mr. Peter D. Oldham and Mr. Anthony W. Munn, July 28, 1975, Folder 57 Box 137 HAP Papers.

war for the United States Strategic Bombing Survey (USSBS or SBS), Price earned his MBA from Stanford University's business school. Upon completing his degree, Price took a position with Stanford Research Institute, a new non-profit adjunct to its namesake which provided research services for industry in the American West. Assigned to the Southern California office, one of the first projects Price worked on were the location and feasibility studies for Disneyland. Shortly thereafter, Price left SRI and founded his own firm specializing in applied economics, Economics Research Associates. ERA would continue to do work for Disney and other world's fairs, including Century 21 Exposition in Seattle, while also building an ever-increasing list of clients in other industries from aluminum to aerospace.¹⁰

It may seem odd that the man who was instrumental in brokering the Abuja deal began his career working on location and feasibility studies for Disneyland. Abuja and Nigeria are a city and nation far different from the vision that the FMG – with the assistance of IPA to define that vision – had for their nation and city. As the Nigerian government moved from Lagos to its new home near the nation's center, inhabitants former city fell more and more into poverty and disrepair as capital investment shifted to the new capital.¹¹ Today the nation remains starkly divided both culturally and socially. It could not be further from the clean, manicured, and curated environment of a Disney theme park, or a world's fair. Yet there are parallels between the work that Price's PRC did for Abuja, and his previous work completed in commercial recreation. Contemporaries had already understood that Disneyland was much more than a theme park. As James Rouse, the real estate developer responsible for Boston's Faneuil Hall, Columbia, Maryland, and Baltimore's Inner Harbor remarked in 1963, Disneyland was "the greatest piece of urban design in the United States today."¹² But besides the parallels between Disneyland and Abuja as planned developments, both also utilized the services of a modern day prognosticator, skilled in performances of objectivity, and with the ability to build confidence in the financially risky, unproven, and uncertain ventures that their clients contemplated.

This dissertation describes how, in the decades after World War II, a new cohort of outside experts helped build confidence among their clients in particular visions of American democratic capitalism. This moment in American history is, as the historian Daniel Horowitz has called it, an era of the "cold war consensus" among social scientists, industry leaders, and policy makers, in the idea that mass affluence would bring social well-being to the many, especially vis-à-vis communism.¹³ I add, however, that especially among members of America's business and financial establishments, there was a lack of confidence in how this particular future could be achieved. Thus, there was an ongoing need to build confidence to move America in new directions that to contemporaries seemed foreign and new, and with no certainty of their ultimate success. As discussed in the historiography section later in this introduction, although historians and other scholars have looked at how modernity, and American democratic capitalism specifically, came to be, including its social, cultural, economic, and political configurations, there has been little exploration into the role of for-profit professional services firms in this story. This dissertation also complicates our narratives of the Cold War military-industrial complex by adding new actors to a familiar casts of characters. This dissertation also describes the expansion

¹⁰ Price, *Walt's Revolution!: By the Numbers*.

¹¹ Immerwahr, "The Politics of Architecture and Urbanism in Postcolonial Lagos, 1960-1986."

¹² James Rouse quoted in John M. Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940* (Berkeley, CA: University of California Press, 1992), 55.

¹³ Daniel Horowitz, *The Anxieties of Affluence: Critiques of American Consumer Culture, 1939-1979* (Amherst: University of Massachusetts Press, 2004), 51.

of quantification and rationality in American social life, especially in the contexts of business, banking, and government. It is about the role and meaning of “economics” outside the halls of academia and government. Lastly, this provides insight into the meaning of objectivity over the 1950s through 1970s, and how that played out in the formation of new professional identities.

To explore these concerns, I look at several instances of constructing mass leisure in the United States. These include: the location and feasibility studies for Disneyland completed by Stanford Research Institute (SRI) in 1953 and 1954, discussed in Chapter 1; construction and operations planning completed by SRI and ERA for the 1962 Seattle World’s Fair, also known as the Century 21 Exposition, in Chapter 2; the use of outside advisors by the non-profit New York World’s Fair 1964-65 Corporation in Chapter 3; ERA’s role in the development of Audio-Animatronics and other Disney attractions at the 1964-1965 New York World’s Fair in Chapter 4; and finally Miami’s never-built Inter-American Cultural and Trade Center (Interama), discussed in Chapter 5. Taken together, these instances cover the time period from the early 1950s until just before the 1970s energy crisis and Watergate began to corrode the nation’s confidence in the idea that mass affluence was sustainable.

The actors in this dissertation are both familiar and unfamiliar. Few have not heard of Walt Disney, but the role of Harrison Price and his firm ERA in the story of Disney’s theme parks are rarely found outside of histories documenting particular aspects of the Disney enterprise. Both ERA and PRC were founded by alumni from non-profit research and development firms and other think tanks. But their main line of work straddled to a far greater extent the public/private division than that of their peers at RAND or the federal departments of the executive branch. Arthur D. Little, Inc., of Cambridge, Massachusetts, is a key actor in the story of industrial research & development in the United States and the history of operations research, but the firm’s work on projects of mass leisure (including the 1964-1965 New York World’s Fair and Miami’s Interama) is little known. The significance of this work in mass leisure is not simply that it is outside of the area explored by scholars. Besides Price, many of these men went on to become key figures in domestic and international development. Some of the very first projects they worked on were in mass leisure, and in very real ways this early work shaped their later careers. Disneyland, Century 21, and New York’s “Olympics of Progress” (as Robert Moses called the 1964-1965 New York World Fair) were the crucibles in which these consultants learned how to apply their trades.

This dissertation takes the perspective that what mattered the most to their clients was in the ability of these outside advisors to act as prognosticators of the future. While their successes in these efforts did matter (or at the very least, how they presented and explained their past successes and failures), it was their abilities to perform as virtuosos in quantitative methods¹⁴ and to mediate between the worlds of banking, government, industry, and the design professions which mattered the most. They performed as objective counsel, and used a range of methods from statistics to operations research and systems analysis. Some called themselves industrial engineers. Others identified as industrial economists, land economists, or recreational

¹⁴ Valorization of quantitative skill is not new to this era. Examples can be found in other historical contexts, including early nineteenth century France, where polytechnicians were taught “very abstract” mathematics with little practical relevance to engineering. See Theodore M. Porter, *Trust in Numbers : The Pursuit of Objectivity in Science and Public Life* (Princeton, N.J.: Princeton University Press, 1995), 57.. Later around the turn of the century, Wesley C. Mitchell used statistics as a means of differentiating himself from the previous generation of economists; see Daniel Breslau, "Economics Invents the Economy: Mathematics, Statistics, and Models in the Work of Irving Fisher and Wesley Mitchell," *Theory and Society* 32, no. 3 (2003).

economists. There was never one fixed professional identity among them. They were on the whole, however, not academic economists concerned with theory. The trade of these men was entirely in applied research. Methods they used ran the gamut from statistical analysis to linear programming to computer simulations. What drove demand for their services among their clients in mass leisure was the need to build confidence in the postwar's highly capitalized, financially risky, and otherwise unproven ventures among a diverse set of interests, both public and private. The value of consultants such as Price to clients lay chiefly in their role as depoliticized actors, and it was their public performances of objectivity which made them appear neutral. Indeed, objectivity was one of the chief products they sold, packaged as a service.

Performances and Professional Authority

The idea that objectivity and prognostication can be performances is based on the sociology of Erving Goffman, in particular his first book *The Presentation of Self in Everyday Life*, first published in 1956.¹⁵ Goffman's sociology interpreted the interactions between human beings as performances. Using the metaphor of the stage, Goffman believed that an individual, through their actions (or rather their performance) attempts to influence the opinions of others. An individual performer would, then declare what reality was in a given situation – and, hopefully, others observing that performance would then believe it. This could manifest, for example, as an employee at an inn presenting themselves before a guest as someone who is able to satisfy particular needs and wants, and to make that guest feel happy and satisfied. Individuals could also come together in a group, or team of performers, whose purpose would be to project “a given...definition of the situation....”¹⁶

Unlike individuals, however, who could create a richly textured declaration of reality, the dynamics of multiple performers acting in concert with one another placed restrictions on how detailed their declaration of reality could be. Not only that, but each individual of a team had to themselves believe in that declaration of reality. Goffman called this declaration a “party line,”¹⁷ and its thinness is directly analogous to what historian of science Theodore Porter has described as the “thin description” of numbers and quantification.”¹⁸ This is where technical methods as stage props become important, for they are the accepted signifiers that others looked to in order to believe an individual can be trusted.

An example from this dissertation helps to illustrate this point. In the summer of 1962, executives of the Century 21 Exposition in Seattle debated whether current revenue and expenses levels would end up bankrupting their enterprise, therefore ruining their ultimate goals of using the fair as a vehicle for redeveloping Seattle's downtown. They asked ERA to reevaluate their previous attendance projections given the fair's actual performance. Based on ERA's conclusions, executives at Century 21 decided against slashing their operating budgets. Thus, ERA, using tools of statistical analysis, helped maintain a projection of reality (the fair's continued profitability). ERA's consultants were able to do so because the historical context they

¹⁵ Goffman's sociology has influenced recent work in science, technology, and society studies (STS). Prominent examples include Stephen Hilgartner, *Science on Stage: Expert Advice as Public Drama*, Writing Science (Stanford, Calif.: Stanford University Press, 2000), Donald MacKenzie, *An Engine, Not a Camera: How Financial Models Shape Markets* (Cambridge, MA: MIT Press, 2006).

¹⁶ “A team...may be defined as a set of individuals whose intimate co-operation is required if a given projected definition of the situation is maintained.” Erving Goffman, *The Presentation of Self in Everyday Life* (Doubleday Anchor Books, 1959), 104.

¹⁷ *Ibid.*, 82-85. Specifically, he writes “the character of the reality that is espoused by the team [of performers] changes. Instead of a rich definition of the situation, reality may become reduced to a thin party line, for one may expect the line to be unequally congenial to the members of the team.” *Ibid.*, 85.

¹⁸ Theodore M. Porter, “Thin Description: Surface and Depth in Science and Science Studies,” *Osiris* 27, no. 1 (2012).

and the Century 21 executives lived in privileged as signifiers of objective expertise the use of quantification.

But Goffman is more than just a nice analytical approach to structuring the historical narrative in this dissertation. In *Presentation* he noted that service personnel “enliven their manner with movements which express proficiency and integrity” in order “to establish a favorable definition of their service or product”¹⁹ Goffman himself had a sustained interest in what Paul Erickson, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm and Michael D. Gordin have called “Cold War rationality.”²⁰ Goffman noted the similarities between his own theory and John von Neumann and Oskar Morgenstern’s work applying game theory to economics.²¹ Goffman continued to work with practitioners in rationality, participating in a 1966 conference held at the University of California’s Berkeley campus and even publishing a book in 1969 which examined how particular instances of playing out a game can provide information about players who may not be present.²² The thought that not only Goffman, but practitioners of rationality as applied to nuclear strategy consciously understood that rationality itself was simply a performance of virtuosity, as a marker of professional authority, is tempting to ponder. As this dissertation suggests, it was not only thought about but understood by practitioners outside the halls of academia and government that the ability to perform with technical methods was central to their professional identities.

Virtuosity in calculation was not the only marker of professional authority for the consultants studied in this dissertation. Price was very careful to instruct his employees in “project[ing] an image which is something less than professional.” This included such things as coming to work early on a Monday morning to take calls from clients and including even with “quickie report[s]... a salient description of what it is all about in the beginning, plus a title page. After all, strangers read these things.”²³ Price also asserted that ERA was “strictly a research organization” that sought to take no part in the actual activities of their clients or projects, as it “could impugn [their] objectivity.”²⁴ Price’s colleague and former boss at SRI, C. V. Wood, once advised Price to bring in a stack of books to put on the table during a client presentation. It did not matter what the books were – they could be the 1924 Mexico mining statistics – just as long as there was a stack of books. Wood also once summed up the work that he and others like him did: “[We] are ... con men, but we deliver the goods.”²⁵

Yet these were performances for the front of house. As explored in this dissertation, occasionally clients and consultants would use this projection of objectivity to advance their own shared agendas. This is most notably found in some of the work ERA completed for Disney, as seen in Chapters 1 and 4. Lastly, consultants did not dogmatically adhere to the most technical methods. Their selection of method was instead along a continuum. Again, Price provides

¹⁹ Goffman, *The Presentation of Self in Everyday Life*, 77.

²⁰ Paul Erickson et al., *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*.

²¹ Goffman, *The Presentation of Self in Everyday Life*, 17.

²² Erickson et al., *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*, 12, Erving Goffman, *Strategic Interaction*, University of Pennsylvania Series in Conduct and Communication, Monograph 1 (Philadelphia, University of Pennsylvania Press, 1969).

²³ H.A. Price to Report Preparation People, November 7, 1969, Notes on how to Manage Professional Services, 1967-1970, 1980-1981, Box 109, HAP. Harrison A. Price to E.R.A./Facts Professional Staff, January 10, 1967, Notes on how to Manage Professional Services, 1967-1970, 1980-1981, Box 109, HAP.

²⁴ Harrison A. Price to Craig Ian Hughes, August 15, 1980, Notes on how to Manage Professional Services, 1967-1970, 1980-1981, Box 109, HAP Papers.

²⁵ Price, *Walt's Revolution!: By the Numbers*, 131.

insight. In his auto-biography, he noted that it was often not advantageous to use a highly technical analysis. Not only would it take longer to do and cost more, but for the most part there would be similar outcomes²⁶ – if the problem at hand still mattered by the time the practitioner completed their analysis.

Historiography

The moment in American history in which the events discussed in this dissertation take place is commonly interpreted by historians as the era of what historian Daniel Horowitz has described as the “cold war consensus,” among social scientists, industry leaders, and policy makers, in the idea that affluence would bring social well-being to the many. Horowitz focuses his study on the intellectual responses to mass consumption, including Lewis Mumford, the marketing theorists Ernst Dichter and George Katona, Vance Packard, Rachel Carson, Ralph Nader, and Daniel Bell. Their responses reflected on the whole an ambivalence to the notion that mass affluence would succeed in its mission without also bringing with it potentially detrimental effects. Rachel Carson’s *Silent Spring* and Ralph Nader’s *Unsafe at any Speed* reflect the critical perspective, while Dichter and Katona are on the whole laudatory towards consumerism.²⁷ Lizabeth Cohen’s sweeping analysis of U.S. history not only looks at the shifts in the nation’s political economy (and Americans’ own understandings of their identities as citizens) during this time, it also considers the development of what she terms the landscapes of mass consumption: suburbs and shopping malls. Like Horowitz, she too notes the failings of mass affluence, most notably its failure for marginalized African Americans and how that played out during the Civil Rights Movement.²⁸ There has also been studies on the role of advertising in American culture.²⁹ I add, however, that especially among members of America’s business and financial establishments, there was a lack of confidence in how this particular future could be achieved. Furthermore, as historians of architecture have noted, there were multiple aesthetic and functional visions for modernity.³⁰ Thus, there was an ongoing need to build confidence to move America in new directions that to contemporaries seemed foreign and new, and with no certainty of their ultimate success.

A new, postwar cohort of professional consultants played a key role in this confidence building effort, which historians of science and technology have explored themes related to including their institutional homes and methods they employed. Zuoyue Wang’s study of the President’s Science Advisor Committee looks at the role of scientific advisors at the highest level of the Executive branch.³¹ The place of modernization theorists as advisors to America’s policies towards international development, including Walt Rostow, is discussed in Nils Gilman’s 2008 study. Gilman tracks how the “moral and scientific” spirit of the social sciences that emerged out of the New Deal would later go on to influence modernization theory. Modernization theorists created a non-communist developmental model, based upon particular interpretations of America’s historical development that viewed the nation as the achievement of modernity. Notably, Gilman’s book also discusses how Walt Rostow’s group at MIT’s Center for

²⁶ Ibid., 261.

²⁷ Horowitz, *The Anxieties of Affluence : Critiques of American Consumer Culture, 1939-1979*.

²⁸ Lizabeth Cohen, *A Consumer's Republic : The Politics of Mass Consumption in Postwar America*, 1st ed. (New York: Knopf, 2003).

²⁹ T. J. Jackson Lears, *Fables of Abundance : A Cultural History of Advertising in America* (New York: Basic Books, 1994), Roland Marchand, *Advertising the American Dream : Making Way for Modernity, 1920-1940* (Berkeley: University of California Press, 1985).

³⁰ Réjean Legault, Sarah Williams Goldhagen, and Centre canadien d'architecture., *Anxious Modernisms : Experimentation in Postwar Architectural Culture* (Montréal: Canadian Centre for Architecture, 2000).

³¹ Zuoyue Wang, *In Sputnik's Shadow: The President's Science Advisory Committee and Cold War America* (New Brunswick, N.J.: Rutgers University Press, 2008).

International Studies collaborated with exhibit designers in creating the “Unfinished Business” exhibit for the 1958 Brussels World’s Fair.³² Gilman’s work is also aligned with an extensive body of scholarship looking at the so-called “defense intellectuals” and their institutional homes, especially that of the RAND Corporation. On the whole, this scholarship focuses on the place of advisors within the federal government and military in the years after 1945,³³ and the attempts of those advisors – again with particular focus on RAND – to diversify into other areas such as urban development.³⁴

Functionally, scholars have viewed outside advisors as brokers of knowledge. Christopher D. McKenna’s history of management consulting looks at how that profession rose in the knowledge gap created by the Banking Act of 1933 (also known as the Glass-Steagall Act). Prior to that Act’s regulation of banks, especially investment and commercial banks, investigations of firms and industries were carried out in-house. The passage of the Act prohibited bankers (as well as accountants and attorneys) from doing these investigations due to potential conflict of interest. Into that gap stepped cost accountants, which became the first management consulting firms. Clients hired these firms for their ability to gain access to knowledge.³⁵ Simon Shaffer shares this view.³⁶ I am indebted to this interpretation of advisors as knowledge brokers, as the ability of consultants to mediate between the domains of business, finance, and design was essential in their ability to forecast a future vision in which various stakeholders could believe.

As discussed above in the section on “Performances and Professional Authority,” a key piece of the dissertation’s argument is that objectivity is not just a particular stance that an observer has towards nature, it is also a performance of an actor or team of actors. The ability to do so successfully was central to the social capital that clients gave to consultants which enabled them to act as prognosticators. Why objectivity became such a valued characteristic in selecting one prognosticator over others is illuminated by scholarship of previous historians about objectivity’s place in the sciences and society. As Lorraine Daston and Peter Galison have suggested, objectivity is a relative newcomer to the practices collectively labeled science. It emerged as an “epistemic virtue” among naturalists in the mid-1800s, who sought to represent nature as accurately as possible, and to not commit the error of fitting observations to what theory predicted. The advent of photography played a key role in the rise of this first style of objectivity which Daston and Galison call mechanical objectivity. Mechanical objectivity was

³² Nils Gilman, *Mandarins of the Future Modernization Theory in Cold War America* (Baltimore: Johns Hopkins University Press, 2003).

³³ One exception outside the history of science is found in the work of sociologist Shiela Jasanoff. See Sheila Jasanoff, *The Fifth Branch: Science Advisors as Policymakers* (Cambridge: Harvard University Press, 1990), ———, *Science at the Bar: Law, Science, and Technology in America* (Cambridge, Mass.: Harvard University Press, 1995).

³⁴ S. M. Amadae, *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism* (Chicago: The University of Chicago Press, 2003), David R. Jardini, "Out of the Blue Yonder: The Rand Corporation's Diversification into Social Welfare Research, 1946-1968" (Carnegie Mellon University, 1996), Jennifer S. Light, *From Warfare to Welfare: Defense Intellectuals and Urban Problems in Cold War America* (Baltimore: Johns Hopkins University Press, 2003), Jennifer Light, "Taking Games Seriously," *Technology and Culture* 49, no. 2008 (2008), M. Fortun and S. S. Schweber, "Scientists and the Legacy of World War II: The Case of Operations Research (or)," *Social Studies of Science* 23 (1993), Erik P. Rau, "Technological Systems, Expertise, and Policy Making: The British Origins of Operational Research," in *Technologies of Power: Essays in Honor of Thomas Parke Hughes and Agatha Chipley Hughes* (2001), ———, "Combat Science: The Emergence of Operational Research in World War II," *Endeavour* 29, no. 2005 (2005), David Hounshell, "The Cold War, Rand, and the Generation of Knowledge, 1946-1962," *Historical Studies in the Physical and Biological Sciences* 27, no. 2 (1997). Paul Lucier also follows a similar approach of tracing consultants’ patrons in his study of nineteenth century geologists consulting for coal and petroleum interests; see Paul Lucier, *Scientists & Swindlers: Consulting on Coal and Oil in America, 1820-1890* (Baltimore: The John Hopkins University Press, 2008).

³⁵ Christopher D. McKenna, *The World’s Newest Profession: Management Consulting in the Twentieth Century*, Cambridge Studies in the Emergence of Global Enterprise (Cambridge ; New York: Cambridge University Press, 2006).

³⁶ Simon Schaffer, *The Brokered World: Go-Betweens and Global Intelligence, 1770-1820* (Sagamore Beach, MA: Science History Publications, 2009).

followed by structural objectivity, in which what counted was the ability for knowledge to pass unchanged from one actor to the next, then trained judgement. The most recent manifestation Daston and Galison call presentation³⁷, which most closely aligns with this dissertation's analysis.

Theodore Porter also offers two interpretations of objectivity – mechanical and disciplinary – which relate to the source of a given actor's political authority.³⁸ Porter's distinction between these two types of objectivity play a key part in my conceptual analysis. The first, mechanical, he takes to mean the reliance of practitioners upon rules and rigor (most often manifest as processes of quantification) to base their findings. It is most frequently associated with politically weak actors, susceptible to outside pressures, such as the U.S. Army Corps of Engineers. Porter's mechanical objectivity is not the same as Daston and Galison's. Those actors with more authority are able to avoid falling back on rigorously intricate scaffoldings. This Porter calls disciplinary objectivity. As Porter notes, in public affairs "expertise has become more and more inseparable from objectivity." Even ostensibly private relationships, such as that between a doctor and patient, are public due to the threat of such a relationship coming into question in a courtroom.³⁹ "Faith in objectivity," he continues "tends to be associated with political democracy, or at least with systems in which bureaucratic actors are highly vulnerable to outsiders."⁴⁰ Further, this dissertation complicates Porter's insight that "[q]uantification is a way of making decisions without seeming to decide"⁴¹ by demonstrating that, in fact, quantification is central to the decision making process.

By the time period in which the events of this dissertation take place, there was an abundance of data available to practitioners for analysis. While not anywhere near the scale of today's Big Data, what was available is astonishing in its own right. Historians have traced the development of this in the late Eighteenth and early Nineteenth centuries, beginning with the first censuses and so-called "moral statistics." As Porter notes, these statistics up through the end of the Nineteenth century "were widely considered to be the best evidence" of society's very existence.⁴² The centralization of markets drove the creation of new categories too. William Cronon traces the development and impact of the Chicago Board of Trade's grades for wheat, categories which did not previously exist on farms or in nature.⁴³ In the late 19th century, however, outside of the decennial census and other pockets of collection in the federal government, insurance actuaries, ... there was little use of statistical data. This changed after World War I. mass surveys began to inform "Americans 'who we are,' 'what we want,' and 'what we believe'"⁴⁴ Developments in the 1910s and 1920s also added to the amount of data

³⁷ Lorraine Daston and Peter Galison, *Objectivity* (Cambridge, MA: Zone Books, 2007). The original article which focused specifically on mechanical objectivity is ———, "The Image of Objectivity," *Representations* 0, no. 40 (1992).

³⁸ Porter, *Trust in Numbers : The Pursuit of Objectivity in Science and Public Life*.

³⁹ *Ibid.*, 7.

⁴⁰ *Ibid.*, 8.

⁴¹ *Ibid.*

⁴² *Ibid.*, 37.

⁴³ Cronon cited in *ibid.*, 47-48, for original passage see William Cronon, *Nature's Metropolis : Chicago and the Great West* (New York: W. W. Norton, 1992), 109-119.

⁴⁴ Sarah Elizabeth Igo, *The Averaged American : Surveys, Citizens, and the Making of a Mass Public* (Cambridge, Mass.: Harvard University Press, 2007), 3.

available. Economic forecasters, scientific management, standardization, and Hoover's associationalism, all contributed to and standardized published data on commerce and industry.⁴⁵

The New Deal did much to shape the nation's political economy in the 1930s through the 1940s and beyond, as Cohen notes.⁴⁶ The most direct, and perhaps unexpected, impact upon the events in this dissertation was the passage of the Banking Act of 1933, also known as the Glass-Steagall Act. As Christopher McKenna describes, the Banking Act created a new market for knowledge brokers with its mandate that commercial and investment banks cease collecting their own information about industries and firms. It also placed a prohibition against other professions, including accountants and attorneys, from similar work. Cost accountants, however, were allowed since they did not measure nor certify the financial performance of firms. The 1930s thus witnessed the birth of management consulting.⁴⁷ As the war concluded and capital flowed once again, there was an increased demand for these investigators, a factor contributing to the move of industry towards outside consultants as I discuss in the dissertation. The emergence of economic forecasting in the early Twentieth century, the development of "the economy" as a "self-contained structure or mechanism" by 1940, and a change in the use of the statistical inference from merely drawing conclusions and divining the future to perhaps controlling it are other key developments discussed by William Friedman, Timothy Mitchell, Daniel Breslau, and Dan Bouk.⁴⁸

Discussions about the statistical inference return us to the history of methods. Statistics, as Porter notes, "was and continues to be ... especially valuable for uncovering causal relationships," especially those which are otherwise hidden from view or variable.⁴⁹ The years after 1945 witnessed a flowering of new methods and techniques including game theory; linear programming; operations research; Planning Evaluation Review Technique (PERT); Planning, Programming, and Budgeting System (PPBS); and systems analysis. The origins of many of these methods lay in World War II, when scientists and others worked in consultative positions with the Allied military. Fortun and Schweber have described these activities as reflecting a shift from the "one best way" of scientific management to an open, stochastic view.⁵⁰ Much of this wartime analysis was focused on aerial combat, especially bombing.⁵¹ Peter Galison has shown how the approach of the United States Strategic Bombing Survey (USSBS or simply SBS) to assess the impact of bombing on enemy economies influenced postwar urban planning.⁵² RAND Corporation is largely considered the epicenter of postwar work on game theory and systems analysis. Historians have traced the development of RAND and its diversification into other

⁴⁵ Porter, *Trust in Numbers : The Pursuit of Objectivity in Science and Public Life*, Igo, *The Averaged American : Surveys, Citizens, and the Making of a Mass Public*, Walter A. Friedman, *Fortune Tellers : The Story of America's First Economic Forecasters*, Ellis W. Hawley, "Herbert Hoover, the Commerce Secretariat, and the Vision of an "Associative State," 1921-1928," *The Journal of American History* 61, no. 1 (1974).

⁴⁶ Cohen, *A Consumer's Republic : The Politics of Mass Consumption in Postwar America*.

⁴⁷ McKenna, *The World's Newest Profession : Management Consulting in the Twentieth Century*.

⁴⁸ Dan Bouk, *How Our Days Became Numbered: Risk and the Rise of the Statistical Individual* (Chicago and London: University of Chicago Press, 2015), Breslau, "Economics Invents the Economy: Mathematics, Statistics, and Models in the Work of Irving Fisher and Wesley Mitchell," Friedman, *Fortune Tellers : The Story of America's First Economic Forecasters*, Timothy Mitchell, *Rule of Experts : Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002).

⁴⁹ Theodore M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton, N.J.: Princeton University Press, 1986), 3.

⁵⁰ Fortun and Schweber, "Scientists and the Legacy of World War II: The Case of Operations Research (or)."

⁵¹ Randall T. Wakelam, *The Science of Bombing: Operational Research in Raf Bomber Command* (Toronto: University of Toronto Press, 2009), the best history of the Strategic Bombing Survey available remains David MacIsaac, *Strategic Bombing in World War Two : The Story of the United States Strategic Bombing Survey* (New York: Garland Pub. Co., 1976).

⁵² Peter Galison, "War against the Center," *Grey Room*, no. 4 (2001), MacIsaac, *Strategic Bombing in World War Two : The Story of the United States Strategic Bombing Survey*.

areas, including social welfare.⁵³ Stephanie Young traces the move of RAND analyst Charles Hitch into the Defense Department, where with Robert McNamara's support he implemented PPBS.⁵⁴ There are also many conceptual approaches to these methods. Paul Erickson, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm and Michael D. Gordin describe them as a kind of "Cold War rationality," highlighting the place of methods such as game theory at the heart of nuclear strategy.⁵⁵ Amadae views rational choice theory as a set of practices that found use as a system of defending capitalist democracy.⁵⁶ William Thomas gives one of the best histories and comprehensive histories of new methods during this time (he includes, for example, chapters on decision theory), calling them the "sciences of policy." He also suggests that what was truly new about the events of World War II was not so much the use of outside advisors by the military but rather the scope and scale that they were employed.⁵⁷

Historians such as Robert W. Rydell have long interpreted world's fairs as expressing the values and ideals of those promoting them.⁵⁸ Fairs held during the Cold War (called "Atomic Age" fairs by Robert Rydell) were largely oriented at promoting the benefits of American democratic capitalism or the role of science and technology in America's future. John M. Findlay takes the Century 21 Exposition in Seattle (and Disneyland) as an example of the anxieties of western planners towards an ever-increasing population as an example of master planned "Magic Lands."⁵⁹ Scholarship about the Disney organization, including the theme parks and motion pictures, are generally biographies of key individuals within the enterprise (especially Walt Disney),⁶⁰ or focused studies on specific projects, such as the original concept for the Experimental Prototype Community of Tomorrow.⁶¹ There are some studies which locate Disney within broader contexts. Karal Ann Marling's work on the Disney theme parks considers them expressions of modern American art and architecture.⁶² John Findlay's study locates the design and planning for Disneyland within a larger story about the postwar American west.⁶³ Avila's considers Disneyland as an example of popular culture during the era of white flight in the Los Angeles area.⁶⁴

How confidence in quantitative prognostication (as discussed in this dissertation) developed shares parallels with what scholars have shown regarding how scientists gain

⁵³ Jardini, "Out of the Blue Yonder: The Rand Corporation's Diversification into Social Welfare Research, 1946-1968", Hounshell, "The Cold War, Rand, and the Generation of Knowledge, 1946-1962.", Sharon Ghamari-Tabrizi, *The Worlds of Herman Kahn : The Intuitive Science of Thermonuclear War* (Cambridge, MA: Harvard University Press, 2005), Light, *From Warfare to Welfare : Defense Intellectuals and Urban Problems in Cold War America*.

⁵⁴ Stephanie Caroline Young, "Power and the Purse: Defense Budgeting and American Politics, 1947-1972" (University of California, Berkeley, 2009).

⁵⁵ Erickson et al., *How Reason Almost Lost Its Mind : The Strange Career of Cold War Rationality*.

⁵⁶ Amadae, *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism*.

⁵⁷ William Thomas, *Rational Action : The Sciences of Policy in Britain and America, 1940-1960*, Transformations : Studies in the History of Science and Technology.

⁵⁸ Robert W. Rydell, John E. Findling, and Kimberly D. Pelle, *Fair America : World's Fairs in the United States* (Washington D.C.: Smithsonian Institution Press, 2000), Robert W. Rydell, *All the World's a Fair : Visions of Empire at American International Expositions, 1876-1916* (Chicago: University of Chicago Press, 1984).

⁵⁹ Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*.

⁶⁰ Neal Gabler, *Walt Disney : The Triumph of the American Imagination*, 1st ed. (New York: Knopf, 2006), Bob Thomas, *Building a Company: Roy O. Disney and the Creation of an Entertainment Empire* (New York: Hyperion, 1998), Todd James Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park* (Jackson, Mississippi: University Press of Mississippi, 2016).

⁶¹ Steve Mannheim, *Walt Disney and the Quest for Community* (Aldershot, England ; Burlington, VT: Ashgate, 2002).

⁶² Karal Ann Marling et al., *Designing Disney's Theme Parks : The Architecture of Reassurance* (Paris ; New York: Flammarion, 1997), Karal Ann Marling, "Disneyland, 1955: Just Take the Santa Ana Freeway to the American Dream," *American Art* 5, no. 1/2 (1991).

⁶³ Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*.

⁶⁴ Eric Avila, *Popular Culture in the Age of White Flight : Fear and Fantasy in Suburban Los Angeles* (Berkeley: University of California Press, 2006).

confidence in the operation of laboratory equipment and the development of cultures of experimentation. Steven Shapin and Simon Schaffer look at how questions of confidence in process were at the crux of the Seventeenth Century debates between Hobbes and Robert Boyle over whether knowledge about the natural world could not only be obtained through an experiment, but also the process of obtaining that knowledge (that is, repeating the experiment at another time and place) could be replicated elsewhere.⁶⁵ Harry Collin's paradigmatic example of the TEA laser considers similar discussions using a more contemporary example.⁶⁶ Bruno Latour provides another perspective, noting that much of contemporary lab equipment is "black boxed" to a scientist. For example, a scientist may understand how a test done by a third party functions from the perspective of its given inputs and outputs, but may not possess knowledge about how the test itself functions.⁶⁷

Other STS scholars have considered the place of science in arenas outside the laboratory. In particular Sheila Jasanoff's work on the place of scientific expertise in regulatory and legal contexts has helped inform how the work done by practitioners in this dissertation varies from a client presentation to congressional testimony.⁶⁸ As Jasanoff notes, scientific in a court room is deconstructed and then reconstructed according to the norms of that environment, including for example what is and is not permissible evidence.⁶⁹ Although I do not take as sharp of an analysis as Jasanoff does, my consideration of how actors select methods and maintain a front and back house for their performances (following Goffman and discussed earlier) does share parallels with Jasanoff's work.

Historians of science and historians of architecture have looked into the relationship between science and architecture. Many of these studies look at the role of the museum in presenting science.⁷⁰ Galison and Emily Thompson's 1999 collection of essays remains perhaps the most comprehensive historical survey of the relationship between the architecture and science, including examples from Eighteenth century German steam engine enclosures to modern hospitals.⁷¹ Other examples include the construction of corporate campuses and asylums.⁷²

Finally, this dissertation contributes to scholarship in the history of architecture on design and architecture during the Cold War by looking at the place of outside consultants in the design professions. In particular, scholars have looked at how the clash between the East and West was reflected in material culture. Greg Castillo has examined how the design of appliances and spaces in the domestic home was a site of conflict between capitalism and communism. The

⁶⁵ Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton, N.J.: Princeton University Press, 1985).

⁶⁶ H. M. Collins, *Changing Order: Replication and Induction in Scientific Practice* (Chicago: University of Chicago Press, 1992).

⁶⁷ Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, Mass.: Harvard University Press, 1987).

⁶⁸ Jasanoff, *Science at the Bar: Law, Science, and Technology in America*, ———, *The Fifth Branch: Science Advisors as Policymakers*.

⁶⁹ ———, *Science at the Bar: Law, Science, and Technology in America*.

⁷⁰ Samuel J. M. M. Alberti, *Nature and Culture: Objects, Disciplines and the Manchester Museum* (Manchester: Manchester University Press, 2009), Sophie Forgan, "Building the Museum: Knowledge, Conflict, and the Power of Place," *Isis* 96, no. 4 (2005), Sally Gregory Kohlstedt, "'Thoughts in Things': Modernity, History, and North American Museums," *Isis* 96, no. 4 (2005), Carla Yanni, *Nature's Museums: Victorian Science and the Architecture of Display* (Baltimore, Md: Johns Hopkins University Press, 2000).

⁷¹ Peter Galison and Emily Thompson, *The Architecture of Science*, ed. Peter Galison and Emily Thompson, The Architecture of Science (Cambridge, MA: The MIT Press, 1999).

⁷² Scott G. Knowles and Stuart W. Leslie, "'Industrial Versailles': Eero Saarinen's Corporate Campuses for Gm, Ibm, and at&T," *Isis* 92, no. 1 (2001), Carla Yanni, *The Architecture of Madness: Insane Asylums in the United States* (Minneapolis, Minn.: University of Minnesota Press, 2007).

1958 “Kitchen Debates” are the best known example of this clash, although as Greg Castillo has noted there were other sites in this battle of ideologies through design.⁷³ The essays in David Crowley and Jane Pavitt’s edited volume follows a similar line of inquiry, looking at how this ideological conflict shaped the design of potential futures.⁷⁴

Chapter Summaries

Chapter One discusses “Project Mickey,” the internal name SRI gave to the location and feasibility studies for Disneyland. It briefly describes the development of the Disneyland concept and the challenges facing Walt Disney both within the studio and from business colleagues. Disneyland, while drawing upon earlier precedents in amusement parks, was nonetheless innovative. Disney faced resistance not only from the studio’s bureaucracy, but also from its shareholders and directors. There was also a lack of expertise among Disney, his brother, and others at the studio in the amusement park industry. When the Burbank city council voted against allowing construction of the park across from the studio, Disney and his brother Roy realized that they needed help finding a suitable location for the park, and also in convincing prospective investors that the concept was viable. At the suggestion of a colleague, the Los Angeles architect Charles Luckman, Disney turned to Stanford Research Institute (SRI) to help answer these questions. Although founded as a non-profit traditional research and development, SRI had developed a practice in industrial economics, a field suitable to help work through the questions the Disneys (and other firms) faced. Yet the analysts assigned to the project, Harrison A. Price and C. V. Wood, themselves lacked experience in the amusement park industry. The chapter explores how SRI became involved in industrial economics as a result of its early lack of funding and the backgrounds of its first industrial economists in aeronautics and Allied bombing analysis. It suggests that the building of confidence was not unidirectional. Wood and Price’s work not only helped the Disneys gain confidence that the park could be realized, but it was also a moment when those analysts gained confidence in their own abilities.

Chapter Two looks at the planning and operations of the 1962 Seattle World’s Fair, also known as the Century 21 Exposition. The Seattle fair was the first international exposition held in the United States since the 1939-1940 New York World’s Fair. Planners for the Seattle fair hoped that it would provide a vehicle through which they could revitalize their downtown area, but also help diversify the local economy away from aerospace and raise the international stature of their city by showcasing it at the fair. It was a tall order. Previous fairs had largely been intended to showcase their host cities, with long-term infrastructure (what planners now call the economic residuals) taking second place. In addition, Seattle lacked space for a fair of the full scale and scope that had been found earlier at fairs in Chicago, New York, and San Francisco. The Seattle group first turned to SRI’s Pacific Northwest Office, and later worked with ERA. A key question, which this chapter explores, was projecting the attendance of the future fair. This number provided the baseline by which all planning would proceed, as well as help guide negotiations with concessionaires. ERA also played a key role in the fair’s ultimate success by providing a revision of their attendance estimates during mid-season. Based upon this projection, the fair’s management elected against slashing budgets, which could have caused great harm to the eventual success of the fair.

⁷³ Greg Castillo, *Cold War on the Home Front: The Soft Power of Midcentury Design* (Minneapolis, MN: University of Minnesota Press, 2010).

⁷⁴ David Crowley and Jane Pavitt, *Cold War Modern: Design 1945-1970* (London: V&A, 2008).

Chapter Three turns to the second great world's fair in the United States, the 1964-1965 New York World's Fair. The chapter gives additional insight into the uses of outside expertise, especially the questions of how and when particular methods are used, and what happens when the "party line" (as Goffman would describe it) of a group of performers breaks down. It takes a collection of three examples from the fair's history to explore these questions. The first is the battle between the fair's president, Robert Moses, and its Finance Committee chair, First National City Bank executive George Moore, over the estimated and actual attendance at the fair. Central to this conflict were attendance estimates completed before the fair opened by Madigan-Hyland of Long Island City, an engineering firm that Moses had a great amount of influence. Moore and Moses's conflict disputed the authority of Madigan-Hyland's original estimates, and who should be authorized to re-evaluate those estimates, if at all. The second and third examples are a proposal by Arthur D. Little, Inc. (ADL), to implement a queue line management and crowd control system based on operations research; and the design of the fair's entry gates, in particular the use of a FORTRAN computer simulation to determine the number of turnstiles required. The fair's rejection of ADL's proposal, but its use of the computer simulation, show that the selection of method and expertise was not so much an older cohort of engineers having a dislike of newer methods, but rather on the ways in which such methods could address specific problems. It also shows that consultants not only used methods, but also the material culture of early computers, in their performances as objective experts.

Chapter Four returns to the Disney organization, specifically the role of ERA in the development of WED Enterprises' Audio-Animatronic technology and the Disney attractions at the 1964-1965 New York World's Fair. It gives a view of technological development outside of the military-industrial complex, as well as how negotiations between multiple partners in a venture were worked out using rational methods. It highlights the part that ERA played as a mediator between two domains, that of finance and the other of design, as well as how ERA analysts used new methods to think through challenges WED faced in closing deals with potential sponsors for the Disney attractions. This work was not always successful, however, as the failed attempt to find a sponsor for a Disney-Alweg Monorail that was to circle the fairgrounds shows.

Chapter Five uses Miami's never built Inter-American Cultural and Trade Center (Interama) as another example of how not all work done by outside analysts was successful. Interama was intended to be a showcase for Miami's vision of Pan-Americanism, while also asserting that city's prominence as the nation's gateway to Latin America and hub for the Western Hemisphere. Planning for Interama stretched just over two decades, from the early 1950s through the early 1970s. During that time, two major visions of Interama were conceived: the first designed by a team of architects led by Hugh Ferriss, and the second by a group which included Marcel Breuer, Louis Kahn, Paul Rudolph, Josep Lluís Sert, Ed Stone, Harry Weese, and Minoru Yamasaki. The first vision failed at obtaining financing. Regulations changing the attractiveness of bonds to investors was one factor, but another more significant was the failure of the original consulting engineers, Ebasco Services of New York, to understand the Interama concept other than in the familiar vocabulary of a world's fair. In response to this, under the direction of Irving Muskat, Interama embarked on a detailed analysis of the difference between Interama and previous world's fairs. In addition, ERA replaced Ebasco as consulting engineers (now referred to as Interama's management consultant in its bond prospectuses). The work by Muskat's team was successful, as the team of architects understood Interama as an opportunity to

experiment widely in new concepts of urban design to realize its Pan-American goals. But convincing others, especially members of congress, to help fund Interama proved exceedingly challenging especially after the financial failure of the 1964-1965 New York World's Fair.

The Epilogue returns to what opens this introduction, the economic planning for Abuja, and contemplates how the history of consultants working in mass leisure can help historians better understand globalization and development in the late twentieth century.

Chapter One

“Project Mickey:” SRI’s location and feasibility studies for Disneyland, 1953-1955

By most measures and for many observers Orange County, California is a form of urban development unprecedented in human history. In the span of about one hundred and fifty years, the county, once a part of neighboring Los Angeles County until 1889, transformed from a region dominated by agriculture and ranching into a sprawling metropolitan area, with much of that transformation occurring after World War II.¹ Some observers have called Orange County a “postsuburban” metropolis, representative of a new form of urban environment which could by the 1990s be found across the United States. A decentralized metropolis, the county lacks a clearly defined downtown. Instead there are scattered regional “centers” for commerce, civic, religious, cultural, and entertainment activities. The private automobile and a sprawling freeway network constitute the backbone of the county’s essential form of transportation.² It is the exemplar of mass affluence and consumption, shaped by the “weakly coordinated sets of conscious decisions by private entrepreneurs and...politicians...”³ How those decisions were coordinated, however, has been little explored.

How those decisions were coordinated may be illuminated by looking at the planning done for what is perhaps the best known example of American mass leisure, Disneyland. Located in Anaheim, California, the park would leave an indelible imprint not only on the county’s future, but also on the shape of middle-class American mass leisure for decades to come.⁴ The park’s opening also illustrates the process whereby a Hollywood motion picture studio transformed into a global conglomerate with interests in media, entertainment, and tourism.

Looking back from today, this may seem a natural progression. But, the planning and construction of Disneyland was fraught with difficulties. Many of Walt Disney’s business associates did not grasp the vision Disney had for the park. Even his family members had little understanding. Local politicians were also ambivalent if not outright antagonistic towards the idea, even Disney was the individual behind it. Aside from this, where to build the park in the sprawling Southern California landscape involved a host of unknowns. The coastal areas and inland valleys had very different climates, with many local variations in between. Although much of the region was still farmland, land ownership – something not at all easily discernible

¹ For general surveys of California’s history, see e.g. Kevin Starr, *The Dream Endures : California Enters the 1940s*, Americans and the California Dream (New York: Oxford University Press, 1997), ———, *California : A History*, 1st ed., A Modern Library Chronicles Book (New York: Modern Library, 2005). On California during World War II, see Roger W. Lotchin, *The Bad City in the Good War : San Francisco, Los Angeles, Oakland, and San Diego*, The American West in the Twentieth Century (Bloomington: Indiana University Press, 2003), ———, *Fortress California, 1910-1961 : From Warfare to Welfare* (New York: Oxford University Press, 1992), ———, *The Way We Really Were : The Golden State in the Second Great War* (Urbana: University of Illinois Press, 2000). For Orange County’s postwar transformation, see Rob Kling, Spencer C. Olin, and Mark Poster, *Postsuburban California : The Transformation of Orange County since World War II* (Berkeley: University of California Press, 1991), 1-30.

² ———, *Postsuburban California : The Transformation of Orange County since World War II*, 10.

³ *Ibid.* The historiography of mass consumerism is capacious, examples include Lizabeth Cohen, *A Consumer's Republic : The Politics of Mass Consumption in Postwar America*, 1st Vintage Books edition ed. (New York: Vintage Books, 2004), Karal Ann Marling, *As Seen on Tv : The Visual Culture of Everyday Life in the 1950s* (Cambridge, Mass.: Harvard University Press, 1994), Horowitz, *The Anxieties of Affluence : Critiques of American Consumer Culture, 1939-1979*.

⁴ On C.V. Wood’s significance in later residential community development and commercial recreation after Disneyland, see Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 4-5. Mass leisure itself is large industry, see “Destination USA: Report of the National Tourism Resources Review Commission,” (Washington, D.C.: National Tourism Resources Review Commission, 1973), 1, Judith A. Adams, *The American Amusement Park Industry : A History of Technology and Thrills* (Boston: Twayne, 1991), 97, 109, 113-119, 141, 143, 165.

by looking at the land itself – could make what appeared to be an ideal location a complicated grid divided among dozens of owners. There were also the vicissitudes of the real estate markets of the Los Angeles hinterlands, where a booming postwar population drove competition to develop open land between subdivision developers, industrial concerns, and others. Lastly, no one at Walt Disney Studios during the 1940s and 1950s had more than a vague understanding of how to run an amusement park. Put simply, the Disneyland venture was not only financially risky and unprecedented, but its future success was anything but guaranteed. After attending a meeting with Disney, one ABC executive left “with a great deal of enthusiasm” about the idea but also noted that his colleagues had little understanding about just “what [Disney] was talking about.”⁵

To help guide them through this uncertainty, the Disney and his brother Roy turned to Stanford Research Institute. Yet in the beginning, the Disney brothers were not yet entirely confident that SRI’s analysts would be able to help them. Nor were the SRI analysts, who called the Disneyland work “Project Mickey,” entirely confident in their own abilities to help their new client. The SRI work was therefore not only one of the earliest examples where the postwar cohort of outside experts built confidence in their clients’ plans, but also one in which those prognosticators gained assurance in their own abilities to divine the future.

Development of the Disneyland Idea

By the late 1930s, Walt Disney Studios had proven itself to be a leader in animated feature length motion pictures, with the release of *Snow White and the Seven Dwarfs* solidifying its reputation. Flush with cash from their success, the Disney brothers moved their company from its long-time home on Hyperion Street in Los Angeles to a new location in neighboring Burbank. Along with financial success, came an increase in the number of people the studio employed. But then fortunes changed. *Fantasia*, released in 1940 and over-budget, did not perform as well as it was hoped. With more workers employed by the studio came greater bureaucratization of the studio’s administration, something made forcefully obvious by Walt Disney’s own physical isolation in his offices at the Burbank studio. It also brought worker unrest – a strike just before the outbreak of war brought crashing down any pretense the Disneys may have had of building an idyllic paradise for their employees, and did much to contribute towards Disney’s building resentment towards the studio he spent so much of his life building. The studio had also become more open to outside scrutiny after going public. Not only did one lender, Bank of America, have veto power over the studio’s projects during the 1940s, but the stockholders influenced the company’s operations, as did the oversight and threat presented by the Securities and Exchange Commission.

The combination of these had resulted in an enterprise that by 1950 resembled little the one from the 1920s. As Disney biographer Neal Gabler notes, this transformation had a deep impact upon Disney. He missed the “heady days of collaboration” among himself and his employees in producing ground breaking work. But turning the clock back was not an option. Realizing this, Disney became increasingly frustrated and disillusioned with the company he and his brother founded.⁶

⁵ Quoted in Gabler, *Walt Disney : The Triumph of the American Imagination*, 553.

⁶ *Ibid.*, 397,400-469,470-452.

In response to his frustrations with the studio Disney began exploring projects outside of motion pictures. At first he built trains at his home in the Holmby Hills neighborhood of Los Angeles. He also became interested in collecting miniatures for use in train layouts. By 1949, Disney had come up with the idea of building “Disneylandia,” a “miniature American turn-of-the-century village.” Fearful that the studio’s bureaucracy might taint or even worse perhaps prevent him from working on it, Disney kept Disneylandia a secret.⁷ At some point, all of these various projects coalesced into the idea to build an amusement park. The exact origins of the park concept vary as told from one person to the next, with some placing the date Disney first came to the idea as early as 1937. Others felt Disney came to the idea during the war. Disney’s brother, Roy, felt Disney’s interest in model trains was the origin, while Disney’s daughter felt it came out of “Daddy’s days” at a local Los Angeles amusement park. Perhaps what is closest to the truth is that Disneyland was born of Disney’s apathy towards the studio and the apparent avenue that working on other projects not directly related to motion pictures could free him from it.⁸

Disneyland is understood today as a striking innovation, something drawing from the familiar and yet in its final shape observers would note had “no antecedent.”⁹ But while in the end this has proven to be the park’s greatest asset, in its early stages it was also its greatest liability. Not only that, but the park broke too much with other amusement parks. Inspiration for the park came from Tivoli, the 1933 Chicago and 1939-1940 New York world’s fairs, the Chicago Railroad Fair, Knott’s Berry Farm, Greenfield Village, Colonial Williamsburg, and the peculiar architecture of southern California.¹⁰ Disney’s family also had little idea about what he was talking about. Disney’s daughter, Diane, recalled that her father’s discussions about the park “became so sweeping that I didn’t take it seriously anymore.”¹¹ His wife Lilian feared it was “too ambitious.”¹² And his brother Roy was similarly unenthusiastic. As Walt himself would later recount, whenever he would try talking to his brother about the project, Roy would “always suddenly get busy with some figures. I didn’t dare bring it up.”¹³ Roy was at first against Walt’s park idea because the company was in no shape to take on additional debt, and rebuked his brother by getting “busy with some figures” whenever Walt approached him about it. Eventually, Walt avoided speaking with Roy on the topic entirely.¹⁴ Even the celebrity Los Angeles architectural firm Pereira & Luckman, whom Disney first hired to design the park partly from their successful work on another Southland attraction, Marineland of the Pacific,¹⁵ did not understand what Disney had in mind. Their early designs for Disneyland were quickly dropped, with Disney deciding to work on it by himself with others from the studio.¹⁶ The park’s innovative character, eventually its greatest asset, was in the beginning its greatest liability.

⁷ Ibid., 545-546,548.

⁸ Ibid., 548-553, Marling, "Disneyland, 1955: Just Take the Santa Ana Freeway to the American Dream."

⁹ Gabler, *Walt Disney : The Triumph of the American Imagination*, 562.

¹⁰ Ibid., 562-563, Marling et al., *Designing Disney's Theme Parks : The Architecture of Reassurance*.

¹¹ Diane Disney quoted in Gabler, *Walt Disney : The Triumph of the American Imagination*, 553.

¹² Lilian Disney quoted in *ibid*.

¹³ {Thomas, 1998 #272@179}

¹⁴ {Thomas, 1998 #272@179}

¹⁵ Marineland of the Pacific was itself based upon an attraction near St Augustine. The Pacific Coast version opened in 1953, designed by Pereira and Luckman. Employees from Marineland of the Pacific and the nearby Reef restaurant in Long Beach collaborated to create the first Sea World park in San Diego, modeling it after Marine Studios in Florida. See Susan G. Davis, *Spectacular Nature: Corporate Culture and the Sea World Experience* (Berkeley: University of California Press, 1997), Greg Mitman also discusses both the original Marine Studios in Florida and Marineland of the Pacific, see Gregg Mitman, *Reel Nature: America's Romance with Wildlife on Films* (Cambridge, Mass.: Harvard University Press, 1999), 157-179.

¹⁶ Gabler, *Walt Disney : The Triumph of the American Imagination*, 560.

While the Disneyland idea promised to once again free Disney's imagination and passion for working with his employees in a way that he had not experienced since the early days of the company, it was a project ill-suited for the corporate bureaucracy of Walt Disney Productions.¹⁷ The solution came in the summer of 1951, when Disney's brother Roy realized that their family may lose the rights to the artistic works they had produced. And so he came up with an idea whereby his brother Walt would own the rights to his name, licensing them to the studio. In return, the studio would pay royalties to Disney. What would eventually be known as WED Enterprises was established in December 1952 as the ultimate beneficiary of the licensing agreement. Roy liked it because it helped protect the interests of the Disney family. But Walt soon realized that this was a way for him to explore – and fund – ventures for which the studio was unsuited. By March 1953, the studio Board of Directors finally agreed to the deal.¹⁸ Privately owned by Disney, WED enabled him to side-step the scrutiny of the publicly owned studio.¹⁹

It was not until the Burbank city council rejected Disney's proposal to locate the park next to the studio, however, that brought two facts painfully to light. The first was that they lacked experience in designing and operating an amusement park; their expertise lie in making and selling motion pictures.²⁰ Second, with the plot by the studio out of the question, finding another site became a question with no obvious answer. They looked at various possibilities, including a firing range and the Palos Verdes peninsula southwest of downtown Los Angeles. Disney's brother had even purchased a lot on option in the Calabasas area.²¹ At one point, two executives from WED even scouted out potential sites along the Santa Ana Freeway corridor.²² But soon both Disney brothers "began to doubt their ability to select a good site" for Disneyland.²³ The question of where to build Disney's dream was one filled with great uncertainty.

Similar questions about where to build and getting investors to fund innovative new designs faced many other firms. Architects and city planners such as Welton Becket hired economists to help persuade clients of the feasibility of Becket's proposed projects.²⁴ architect Victor Gruen hired the accountant Larry Smith to help secure funding and support (both public and private) for his innovative regional indoor shopping center and pedestrian malls.²⁵ Pereira & Luckman, whom Disney had earlier hired to develop designs for Disneyland, used the services of the fledgling Stanford Research Institute (SRI) of Menlo Park to help develop numbers for a proposed stadium project they were involved on in Honolulu.²⁶ It was Luckman, who at a

¹⁷ Ibid., 577.

¹⁸ Ibid., 557-559.

¹⁹ Ibid., 562.. As Gabler discusses, the name licensing and personal services agreement which enabled the creation of WED faced resistance from the directors and stockholders. At least one director resigned in protest, and one stockholder brought a lawsuit against the studio when the deal was announced. Ibid., 559. This conflict between owners' interests and the desires of Disney to pursue his own projects with little control would foreshadow future conflicts between the two that would shape the park's early history up until Disney's death.

²⁰ Ibid., 556, Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 42-45.

²¹ ———, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 45,47.

²² Gabler, *Walt Disney : The Triumph of the American Imagination*, 566.

²³ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 47.

²⁴ Later, in 1960, Becket realized that to avoid conflicts of interest that an outside firm handle such feasibility work. He hired Price's firm, Economics Research Associates, to do this analysis. See Price, *Walt's Revolution!: By the Numbers*, 60.

²⁵ M. Jeffrey Hardwick and Victor Gruen, *Mall Maker : Victor Gruen, Architect of an American Dream* (Philadelphia: University of Pennsylvania Press, 2004).

²⁶ Price, *Walt's Revolution!: By the Numbers*, 60, Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 47, Luckman's autobiography is Charles Luckman, *Twice in a Lifetime : From Soap to Skyscrapers*, 1st ed. (New York: W. W. Norton, 1988).

cocktail party in spring of 1953, who suggested that Disney call up the Los Angeles offices of SRI to help on the problem of finding a site to build the park. Disney asked one of his staff to phone SRI the following day, June 3, 1953, Harrison Price and C. V. Wood, two economists from SRI's Southern California office, met with the Disney brothers at WED's offices in Burbank.²⁷

Early history of Stanford Research Institute

A fledgling firm of consultants, SRI (Stanford Research Institute) provided exactly the expertise that Luckman and other developers needed to gain confidence in risky investment decisions amidst an economic climate of unprecedented opportunity. Founded in November 1946, SRI came about from the merger of the Pacific Research Foundation in Los Angeles with efforts to start a similar institute homed at Stanford University in Northern California.²⁸ SRI was intended to be an "applied research organization" for the Western United States, modelled after other independent R&D firms, including Battelle, Armour, and Arthur D. Little. SRI was the dream of Stanford academics, San Francisco industrialists, engineers from Lockheed, and California bankers. Early planning for it reached back to the 1930s and in some ways directly attributable to the ideas about associationalism and national research of Herbert Hoover, former President, Secretary of Commerce, and Stanford trustee.²⁹ Despite this support and pedigree, however, SRI's directors were uncertain about the path to achieving their vision of creating a research institute for industry in the American west. Unlike Mellon and Armour at their founding, SRI lacked an endowment to fund its initial capital expenses and help maintain operations during its launching phase. And to do the sort of research for industry that the founders had envisioned, the Institute needed laboratories well-stocked with expensive capital equipment.

SRI's solution to its funding challenges and its presence California's Bay Area and Los Angeles were two factors that pushed the firm into contact with architects and developers such as Luckman and ultimately into the offices of WED. One solution was to secure a loan from the Reconstruction Finance Corporation, a federal agency that dated to Hoover's presidency and the early years of the Great Depression. Yet the RFC had become by the late 1940s embroiled in controversy, making a loan impossible. Another solution was to secure research contracts from the federal government. This, however, was unpopular among many board members, who wished to avoid SRI becoming little more than a government-funded lab. SRI's first director, in fact, was fired partly out of his reliance upon government projects to ramp up the Institute's revenue. The board replaced him in April 1948 with J. E. Hobson, who came to SRI from the Armour Foundation. Hobson proposed a subscription model. In exchange for an annual fee, the Institute would provide clients with limited research services (e.g., a broad survey of the prospects of the energy industry in a given region). Should a client want further research into a particular problem, SRI would give other concessions for those more detailed investigations. This subscriber model proved moderately successful, yet funds remained tight through the early 1950s. Industry was hesitant to sign up, in part because of the Institute's continued deficit and

²⁷ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 47-48.

²⁸ Charles J. Maisel and Treva W. Jones, "A History of Stanford Research Institute," (Menlo Park, CA: Stanford Research Institute, 1962), 1-3, Donald L. Nielson, *A Heritage of Innovation: Sri's First Half Century* (Menlo Park, Calif.: SRI International, 2004), B2.

²⁹ Maisel and Jones, "A History of Stanford Research Institute," 1-3, Nielson, *A Heritage of Innovation: Sri's First Half Century*, B1-B2. Published histories of SRI include *ibid.*, Weldon B. Gibson, *Sri, the Take-Off Days: The Right Moves at the Right Times* (Los Altos, Calif.: Pub. Services Center, 1986), ———, *Sri, the Founding Years: A Significant Step at the Golden Time* (Los Altos, Calif.: Publishing Services Center: distributed by W. Kaufmann, 1980).

uncertainty regarding its future. In 1951, the problem was so acute that the Institute almost closed its doors.³⁰

Other non-profit R&D firms faced similar challenges in post-war era, struggling to maintain their relevance in the face of the new world of Big Science and massive federal funding. The Mellon Institute, for example, tried to address this problem by shifting their focus from applied to fundamental research,³¹ SRI's directors took a different approach. They turned to the field of industrial economics, Industrial economists required equipment no more expensive than graph paper, pencils, a desk and chair to do their work. Focusing on industrial economics was thus an elegant solution to the two problems of no capital equipment for laboratories and reliance on government contracts. SRI's directors also never intended a reliance upon industrial economics to be more than a temporary measure. Nonetheless, this decision would eventually place the institute as one of the leading firms providing services in the management sciences.³²

Besides low equipment cost, industrial economics projects could be pitched as the first step in a multi-phase investigation. They were a sort of trial balloon that would hopefully entice a client to further invest in a "laboratory phase" involving more expensive equipment. It was hoped this could possibly fund one or two pieces of much-needed lab equipment in the process."³³ This approach also helped SRI establish some of its satellite offices, including its Pacific Northwest Office in Portland, Oregon. Pacific Power and Light funded the opening of that office, and in return SRI "promised ... that the initial work of the office will be directed to a study on long range development of the power and water resources of the Pacific Northwest."³⁴ Analysts at SRI's Pacific Northwest office would soon go on to do feasibility studies for two expositions, one put on by the State of Oregon to celebrate their centennial, and a second in neighboring Washington for what would become the 1962 Seattle World's Fair.³⁵

Yet SRI's focus on industrial economics meant that the new firm would compete against management consulting firms.³⁶ The profession of management consulting emerged in the aftermath of the Banking Act of 1933, also known as the Glass-Steagall Act. Although best known for the limits it placed on the banking industry, the Act directly impacted how information about specific firms and industry sectors was produced and disseminated. Prior to the Act's passage, lawyers, accountants, and bankers would do these investigations on their own. Once the Act became law, however, it required that "any financing [activity to] be preceded by

³⁰ Minutes of Special Meeting of the Board of Directors, April 6, 1948, 1, Folder 1 - Stanford Research Institute - Board of Governors - 1947-49 [1 of 2], Box 1, Stanford Research Institute Records SC 801, Stanford University Archives (hereafter "SRI"). Minutes of Regular Meeting of the Board of Directors, January 20, 1948, 1, Folder 1 - Stanford Research Institute - Board of Governors - 1947-49 [1 of 2], Box 1, SRI. On Tressider's disagreement with Talbot's overall guidance of SRI, see Minutes of Regular Meeting of the Board of Directors, November 25, 1947, Folder 1 - Stanford Research Institute - Board of Governors - 1947-49 [1 of 2], Box 1, SRI. Minutes of the Meeting of the Executive Committee of the Board of Directors, September 11, 1950, Folder 5 - SRI - Board of Governors 1950-51, Box 1, SRI. On first year revenue, see Nielson, *A Heritage of Innovation: Sri's First Half Century*. Minutes of Board of Directors' Meeting, September 28, 1949, 5-6, Folder 3 - Stanford Research Institute - Board of Directors - 1949 - 1950 [1 of 2], Box 1, SRI. Gibson, *Sri, the Take-Off Days: The Right Moves at the Right Times*, 51-52, Nielson, *A Heritage of Innovation: Sri's First Half Century*. B3

³¹ John W. Servos, "The Mellon Institute, Private Industry, and the Federal Patron," *Technology and Culture* 35, no. 2 (1994).

³² Minutes of the Board of Directors, September 27, 1951, 2, Folder 7 - SRI Board of Governors 1951-52 [1 of 2], Box 1, SRI. Gibson, *Sri, the Take-Off Days: The Right Moves at the Right Times*, 36-38, 41, 90-91. Charles N. Kimball, "Preface: Unity in Purpose," in *Sri: The Take-Off Days, the Right Moves at the Right Times* (Palo Alto, CA: Publishing Services Center, 1986), xv-xvi.

³³ Minutes of the meeting of the board of directors, September 27, 1951, 2, Folder 7 - SRI Board of Governors 1951-52 [1 of 2], Box 1, SRI.

³⁴ Gibson, *Sri, the Take-Off Days: The Right Moves at the Right Times*, 152-153.

³⁵ World Fair Commission Records, September 10, 1959, Box 1. Folder World's Fair Commission Minutes, 1955, Subgroup I World Fair Commission. Series I Minutes and Reports of the World Fair Commission, 1955-1963, Century 21 records, Puget Sound Regional Archives, State of Washington. (hereafter "C21").

³⁶ Minutes of the Meeting of the Executive Committee of the Board of Directors, April 26, 1951, 4, Folder 6 - SRI - Board of Governors 1950-51 [2 of 2], Box 1, SRI.

the exercise of due diligence,” and restricted banks, attorneys, and accountants – any professional who might have a potential conflict of interest – from conducting such work. This restriction created a new market for information, and into it stepped the cost accountants. Unlike accountants, which the Act excluded, cost accountants measured the costs of production for an entire industry, rather than measure the financial performance of specific firms. Enterprising cost accountants such as James O. McKinsey of Chicago took advantage of that opportunity. Within a period of a few short years, former cost accountants such as James McKinsey and Edwin Booze “had succeeded in institutionalizing the field of management consulting.”³⁷ By the early 1950s, management consultants had firmly established their reputations as reliable brokers of institutional practices and industry information, even advising the executive branch of the federal government on a massive restructuring in the late 1940s.³⁸ SRI’s directors were well aware of this.³⁹ They no doubt realized that in moving away from pure physical research and do research which executives would then act upon, there was the potential for competition.

Competing against management consultants was not just a concern of SRI’s directors, but also practitioners of the protean field of operations research (OR). Operations researchers understood they would also compete against firms such as McKinsey & Co. and Arthur Anderson in their quest for advising the highest levels of management within a firm.⁴⁰ They addressed this concern by outlining a distinction between reason (which included gut instinct, tacit knowledge) and a new concept of scientific rationality (data collecting and rigorous analysis - in short, rule following). The former was the domain of an OR practitioner’s client; the latter the domain of the OR practitioner himself. Expertise in rationality is the value an OR practitioner brought to a business problem, and unlike management consultants, whom one observer derided as “stand-in artists,” an OR practitioner would not pretend to replace those aspects of reason represented by a firm’s management.⁴¹ Their claims to the benefits of scientific rationality were also reinforced by the relatively high prestige which science in America had in the post-war era.⁴² Firms such as Arthur D. Little, Inc., used OR as a marketing strategy to gain clients.⁴³ So successful was this strategy at Arthur D. Little and other firms that by 1953, the management consulting firm Booz Allen felt threatened enough to advocate a limited deployment of OR within industry - despite having operations researchers on staff.⁴⁴

SRI took a similar tactic to competition against management consultants. Its directors emphasized the work of their institute as being fact-finding and a following a scientific methodology over giving “advice and opinions supported merely by experience or judgement....”⁴⁵ Such work was “not ... cheap research.” Rather it would be done to the “highest quality ... possible, as efficiently and quickly as it may be done consistent with high scientific

³⁷ McKenna, *The World's Newest Profession : Management Consulting in the Twentieth Century*, 17-18, 32-34.

³⁸ *Ibid.*, 94-104.

³⁹ Minutes of the meeting of the executive committee of the board of directors, April 26, 1951, Folder 6 - SRI - Board of Governors 1950-51 [2 of 2], Box 1, SRI.

⁴⁰ Herbert Solow, "Operations Research," *Fortune* 43 (1951). Solow’s article is also cited by Thomas, *Rational Action : The Sciences of Policy in Britain and America, 1940-1960*. and Fortun and Schweber, "Scientists and the Legacy of World War II: The Case of Operations Research (or)." with the latter misattributing Solow’s article to the MIT economist Robert Solow.

⁴¹ Solow, "Operations Research."

⁴² Although science’s cultural prestige was never guaranteed, it nonetheless did influence decisions among elites. For one example asserting science did not rise fully unchallenged, see James Gilbert, *Redeeming Culture: American Religion in an Age of Science* (Chicago: The University of Chicago Press, 1997).

⁴³ William Thomas, "Operations Research Vis-À-Vis Management at Arthur D. Little and the Massachusetts Institute of Technology in the 1950s," *Business History Review* 86, ———, *Rational Action : The Sciences of Policy in Britain and America, 1940-1960*, 233-240.

⁴⁴ J. W. Pocock, "Operations Research and the Management Consultant," *Journal of the Operations Research Society of America* 1, no. 3 (1953).

⁴⁵ Gibson, *Sri, the Take-Off Days : The Right Moves at the Right Times*, 81.

standards.”⁴⁶ And to avoid Booz Allen’s cautionary tale against a too aggressive a penetration of operations research (and upstart consulting firms into Booz Allen’s traditional client base), one SRI economist, William J. Platt, suggested that defining operations research as a body of practice missed the point entirely. Instead, companies interested in the services of newer firms, like SRI, should look at successful examples of research work done by those firms as the true yardstick of comparison. The client could then call such research by “whatever brand name appeal[ed] to him.” What mattered in the end, stressed Platt, were the results.⁴⁷

Little startup capital and the subsequent need to differentiate against competitors in management consulting was one determinant of SRI’s early research portfolio. Another was the role of air warfare in World War II and the location of aircraft manufacturing plants in southern California, which supplied several of SRI’s first industrial economists. The American aeronautics industry had benefited greatly from the war, growing to meet the military’s demand for bombers and fighters. This was especially the case in California, where cities such as San Diego and Los Angeles had by 1945 thriving industries feeding the Allied air war.⁴⁸ The Pacific Research Foundation, precursor to SRI, was itself founded by former Lockheed employees associated with that firm’s research division.⁴⁹ The second employee in SRI’s Economics Division was William J. Platt, who came from Convair. At Convair, he worked as a production engineer, developing a new method to schedule subassembly production for the B-24 Liberator and PB2Y Coronado.⁵⁰ Just before leaving for SRI, moved into market research to analyze the problems related to “Reconversion.”⁵¹ At SRI, Platt hired a fellow Convair alumnus, C.V. Wood (who liked to go by Woody). Wood began - but never finished - a degree in petroleum engineering at the University of Oklahoma. After taking a job at Convair’s Fort Worth, Texas plant, he was reassigned to the firm’s San Diego factory. By 1947, Wood was the head of industrial engineering at Convair.⁵² But not all of SRI’s first industrial economists came from the aeronautics industry. Harrison Price (who preferred Buzz) came directly to SRI via Stanford’s Business School. But before earning his MBA, Price worked as an analyst in the United States Strategic Bombing Survey (USSBS). The USSBS was formed with the purpose of measuring the efficacy of Allied bombing campaigns during the war (and in the process provide evidence that the Air Force should continue to exist as a separate branch of the U.S. military after the war). Although Price only served in the USSBS for a few months in post-atomic Japan, it made a deep impression upon him. Gathering empirical data for his reports was often a difficult process. Working through an interpreter (Price could not speak Japanese), he gathered evidence to assemble a picture of the likely effects that bombing machine tool plants had on the overall Japanese industry.⁵³

⁴⁶ Ibid., 77.

⁴⁷ William J. Platt, "Industrial Economics and Operations Research at Stanford Research Institute," *Journal of the Operations Research Society of America* 2, no. 4 (1954).

⁴⁸ Lotchin, *The Bad City in the Good War : San Francisco, Los Angeles, Oakland, and San Diego*, 156.

⁴⁹ Maisel and Jones, "A History of Stanford Research Institute."

⁵⁰ Bill Platt, "Air Struck: Memoirs of my 1924-1949 Romance with Aviation," September 1991, unpublished manuscript, 3, 5-7, 8-9, 10, Platt, William James - Increment, April 1988, Box 1, William J. Platt papers, Hoover Institute Archives (hereafter "WJP")

⁵¹ Bill Platt, "Air Struck: Memoirs of my 1924-1949 Romance with Aviation," September 1991, unpublished manuscript, Platt, William James - Increment, April 1988, Box 1, WJP.

⁵² Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 17-20.

⁵³ File Number 314.7 Historical Summary USSBS at Nagoya 17 October 1945 to 26 November 1945; Folder - 314.7 Historical Summary of USSBS at Nagoya, October 17, 1945 to November 26, 1945; Box 25 - 314.7 USSBS Division Histories; Entry 1 - Office of the Chairman General Correspondence 1944-1947; Records of the U.S. Strategic Bombing Survey, Record Group 243; National Archives II, College Park, MD (hereafter "SBS"). 314.7 Military Histories Equipment Div USSBS History; Folder 314.7 USSBS Equipment Division History ETO; Box 26 - 314.7 USSBS Division Histories; Entry 1 - Office of the Chairman General Correspondence 1944-1947; SBS. Price mentioned his lack of

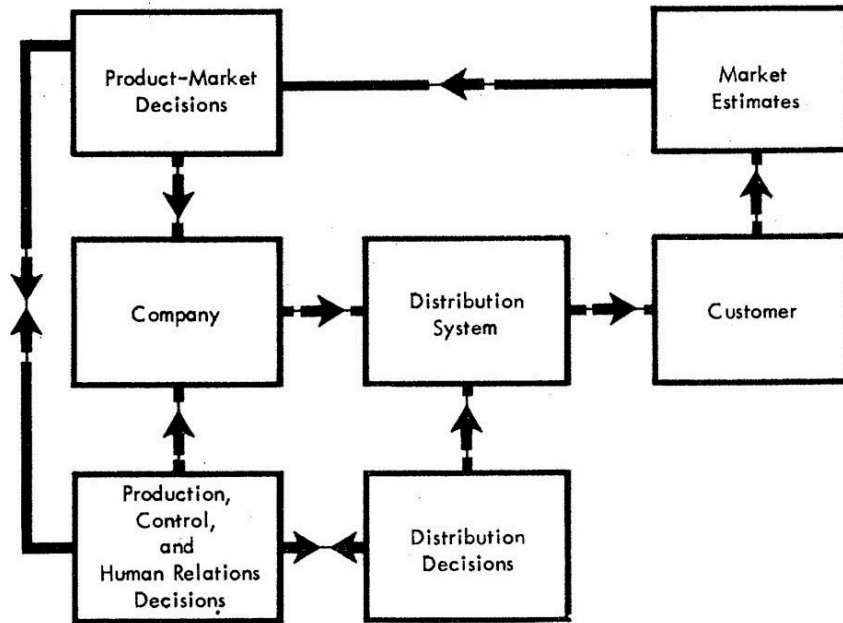


FIG. 2. The product-market decision loop, with technology decisions.

Figure 1.1. Understanding product market decisions through the lens of a servo-mechanism. Source: Platt, William J. "Industrial Economics and Operations Research at Stanford Research Institute." *Journal of the Operations Research Society of America* 2, no. 4 (1954): 411-418.

Whether to produce bombers or measure their efficacy in combat, all three men shared a common analytical background drawing from their common experience in the aeronautics industry during the war. They understood economic activity as part of a system of feedback loops. Thus deciding which products or services a firm should sell in what markets meant conceptualizing their relationship as “an elementary servo-mechanism” such as that used in weapon fire control systems (Figure 1.1).⁵⁴ Rationalized scheduling addressed bomber production challenges, such as bottlenecks in a dispersed set of factories and firms that sprawled across Southern California and the United States. It helped coordinate raw materials, subassembly feeder factories, and final assembly plants.⁵⁵ The theory of bombing developed at the Army Corps Tactical School over the 1920s and 1930s drew upon an emerging concept of particular nations having an “economy,” an abstract object which could be analyzed through tools such as statistics. Understanding how a nation’s economy functioned, the theory stressed, would help pin-point specific bombing targets whose destruction could cause the entire system to come down like a house of cards.⁵⁶

Japanese proficiency during a talk he gave before Japanese business executives in 1991. See Harrison A. Price, "Matsushita, Sony and the Future of the Leisure/Recreation Business," April 25, 1991, Folder: Series VII. Buzz Price Materials -- Speeches on Walt. 1971-1974, 1991, Box 5, Series VII, HAP. Price, *Walt's Revolution!: By the Numbers*, 18.

⁵⁴ Platt, "Industrial Economics and Operations Research at Stanford Research Institute."

⁵⁵ Bill Platt, "Air Struck: Memoirs of my 1924-1949 Romance with Aviation," September 1991, unpublished manuscript, Platt, William James - Increment, April 1988, Box 1, WJP.

⁵⁶ Capital Equipment and Construction Division, "The Japanese Machine Building Industry" Dates of Survey: October 1, 1945 - 1 Dec 1945, Pub November 15, 1946; Roll 242; Entry 41 - M1655; SBS. MacIsaac, *Strategic Bombing in World War Two: The Story of the United States*

The three also brought something else to the table which shaped their work: a particular idea about what it meant to be an outside expert. Platt hired both men as the foundation of SRI's economics program at its Southern California office. Price, with his technical skill writing analytical reports in USSBS and as a recent graduate of Stanford's Business School, Platt paired with the persuasive showmanship of Wood, whom he knew from Convair. As Price later recounted, "Wood would sell it and I would do it."⁵⁷ Wood had a firm grasp of what it meant to use virtuosity to gain someone's confidence. At a young age his parents sent him to Los Angeles to perform in a vaudeville act as a rope twirler, where he learned that playing up a kind of "Lone Star charm" did much to win over an urbane audience.⁵⁸ The former head of industrial engineering at Convair also had an incredible ability to do calculations in his head. Doing 3-digit multiplication and many of the basic calculations taught in entry-level engineering courses mentally enabled Wood to not only land a job with more responsibilities and higher pay than the one he applied for at Convair, but also do so without his employers ever thinking they should verify that he did complete his undergraduate degree (he did not).⁵⁹ As Price would later recall, Wood was "the quickest numbers man He could estimate space, time, velocity, volume, revenue, cost and frequency and other physical variables and relationships with a mental arithmetic that was quick as a flash."⁶⁰ To succeed, Wood drew upon his skills to win the confidence of others. This also made an impression on the young Price. It was this configuration of skills and an understanding how and when to use them that the pair had when they met with the Disney brothers in early June, 1953.

Finding Anaheim

"Project Mickey," as it was called by the SRI team, referred to the work completed by the the SRI team for Disneyland. As told elsewhere, the research Price and Wood did helped Disney locate the land in Anaheim where the park was eventually built, and also to help planning and design of the park in its early stages.⁶¹ But Project Mickey was more than that. It was a trial by fire for Wood and Price, in which their client, the Disneys, helped them gain confidence in their own abilities to apply their skills to projects and industries other than those they had been trained in. Project Mickey, then, was the space where confidence, both in the future Disneyland park, and in one's skills as a prognosticator of that future, was mutually created by Wood, Price, and Disney.

The selection of SRI by Disney was in part a performance intended to gain the confidence of their business partners. With little hesitation, the Disney brothers selected SRI based on the recommendation of Los Angeles architect Charles Luckman,⁶² which is particularly striking considering the number of potential firms which the Disneys could have selected. SRI had for several years been promoting its services to local industry through presentations and favorable newspaper coverage. The Institute also had a favorable reputation among California's captains of industry and finance, having been founded by some of the chief figures in those circles. As the studio's primary banker, gaining the favorable opinion of Bank of America on the

Strategic Bombing Survey, 22. On development of the idea of the economy see Mitchell, *Rule of Experts : Egypt, Techno-Politics, Modernity*, 80-84, Breslau, "Economics Invents the Economy: Mathematics, Statistics, and Models in the Work of Irving Fisher and Wesley Mitchell."

⁵⁷ Price, *Walt's Revolution!: By the Numbers*, 132.

⁵⁸ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 7-11.

⁵⁹ *Ibid.*, 17-20, 25.

⁶⁰ *Ibid.*, 17-18, Price on wood in Price, *Walt's Revolution!: By the Numbers*, 129.

⁶¹ Nielson, *A Heritage of Innovation: Sri's First Half Century*, 1417-1418, Gabler, *Walt Disney : The Triumph of the American Imagination*, 566-567, Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 51.

⁶² Price, *Walt's Revolution!: By the Numbers*, 27.

park project may have also played into the decision. During World War II, Bank of America had so much control over the studio that bank executives were able to dictate what the studio could work on, much to Disney's dismay.⁶³ Since 1950, SRI researchers had been working on an automatic checking account bookkeeping system for Bank of America called "ERMA" (Electronic Recording Method of Accounting). At its height, the ERMA project employed "a staff of 100 engineers, technicians, and supporting personnel," and was finally completed in 1956.⁶⁴ Selecting SRI was an act intended to demonstrate prudence to others in the social world of American business and finance that the Disneys inhabited, and followed the "party line" of what prudence and caution in business decision making meant to those colleagues.

But if the Disneys were quick to place their confidence in Wood and Price, the latter, with their youth and inexperience in industries outside aeronautics may have felt otherwise. Price's own question of Disney as to what plots to consider (with Disney allegedly responding that he had no preference, and to consider everything)⁶⁵ could be interpreted as a young analyst reeling from the sheer magnitude of the project ahead: to evaluate an entire part of one of the nation's biggest states for an ideal location, a job which would have been much easier to do if the Disneys only wanted an evaluation of a few known plots. During their first meeting at WED, Wood and Price proceeded to explain just what SRI could offer Disney, both on the problem of location and the park's feasibility.⁶⁶ At this meeting, Disney made clear to the SRI team that they should not place emphasis on existing land that had been considered before, including a small parcel that Roy Disney had purchased on option.⁶⁷ Despite these trepidations, Price and Wood both realized the opportunity to work on such a unique project. It was an opportunity also understood by Platt, who once described Project Mickey as "a glamorous example from the mecca of glamor itself, Hollywood!"⁶⁸

Wood and Price – especially Price – used rigor in their work to compensate for their lack of confidence and experience. The location studies are a case in point. At least 13 tables and maps charting average annual rainfall, summer and winter maximum and minimum temperatures, population distribution, "haze patterns," and a reproduction of the 1953 "Los Angeles Master Plan for Expressways" were included in the final printed report.⁶⁹ In his analysis, Price first divided the Southern California area into 10 districts. His objective at this point was to narrow down possible areas of further investigation. The area was quite large, extending from Chatsworth to Pomona along its rough northern boundary to Tustin and Balboa in the South. With a target size of 150 to 160 acres, Price used an aerial photo survey to eliminate areas having "Intensive improvement and buildup." He also tuned to information from government sources to rule out areas owned or leased by the oil industry (and thus unavailable for purchase), and knowing that parts of the region were prone to flooding looked at information available from the LA County Flood Control District.⁷⁰ A requirement to have line-of-sight with antennas on Mount

⁶³ Gabler, *Walt Disney: The Triumph of the American Imagination*, 555.

⁶⁴ "Research Revolutionizes Commercial Bank Accounting," *SRI Journal Feature No. 4* 1966, 8.

⁶⁵ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 50.

⁶⁶ *Ibid.*, 49.

⁶⁷ *Ibid.*, 50.

⁶⁸ Platt, "Industrial Economics and Operations Research at Stanford Research Institute."

⁶⁹ Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, Earnest W. Moeller, An Historical Sketch, Formal Presentation July 14, 1980, Earnest W. Moeller Collection, D165, Anaheim Heritage Center, Anaheim Public Library (hereafter "EWM")

⁷⁰ Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 1, 4-6, EWM.

Wilson (the Disneys intended to telecast a TV show from the park) also helped eliminate some areas.⁷¹ Price then looked to other criteria, including regional differences in climate, population, and accessibility of potential sites by bus, rail, and automobile.⁷² Population growth rates were projected for each district.⁷³ Price even went so far as to attempt to chart the flow of haze, fog, and relative amounts of sunshine, although he noted that the data available was scarce and “subject to error because of the lack of comparability among the different recording sources.” Almost apologetically, he noted that “[f]urther refinement” of the available data “was considered uneconomic.”⁷⁴ In the end Price eliminated 8 of 10 districts, or nearly 2/3rds, of the total area initially under survey, recommending the future Santa Ana Freeway corridor for closer inspection.⁷⁵

On July 14, 1953 Wood and Price presented their initial findings to the Disney brothers.⁷⁶ The thoroughness and rigor of Price’s analytical work paid off, and the Disneys gave approval to further investigate Santa Ana corridor, especially that part passing through the Whittier-Norwalk and north Orange County areas.⁷⁷ Price next began a search through county records for information on prospective plots.⁷⁸ Price, assuming that the easiest path to acquiring the land for Disneyland would be through a single landowner, evaluated sites such as one owned in La Mirada by the Southern California industrialist Leo Harvey.⁷⁹ But an Anaheim real estate man, Fred Wallich, informed Price that he knew of a group of owners who were considering selling their property to a housing developer. Possibly with Wood’s urging, Price evaluated the area Wallich had informed them of. They called it the “Ball Road Subdivision,” after the road which it abutted to the north.⁸⁰ The plot fit almost all of the needed criteria, the asking price was “a bargain,” and it had some of the lowest tax rates in the county.⁸¹ Yet again Wood and Price

⁷¹ Gabler, *Walt Disney : The Triumph of the American Imagination*, 553.. Price took into consideration the suitability of prospective sites to transmit signals to antennas on Mount Wilson, used at the time for remote telecasting. See Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 1, 4-5, EWM.

⁷² While Marling, "Disneyland, 1955: Just Take the Santa Ana Freeway to the American Dream." emphasizes Disney’s intention to have Disneyland cater to an emerging conception of the American family that centered on private automobile ownership, at least during this moment of planning the ability for visitors to arrive by bus and rail was also a serious consideration. See Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 7, EWM.

⁷³ Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 1, 6-7, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980," EWM.

⁷⁴ Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 9, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980," EWM.

⁷⁵ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 51. Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 2, 4, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980, EWM.

⁷⁶ *Ibid.*, 52.

⁷⁷ *Ibid.* One area under consideration was the vast holdings of the Irvine Ranch; however at this time the Irvine Ranch was only interested in leasing, not selling, land, which ruled out the area by default. See Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, A-12, EWM.

⁷⁸ *Ibid.*, Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 5, Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980, EWM.

⁷⁹ *Ibid.* "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 13, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980," EWM.

⁸⁰ "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, EWM.

⁸¹ To a greater degree than other Orange County cities such as Santa Ana, Anaheim’s civic leaders had made deliberate choices to attract new industry. The city’s economy had long been dependent upon citrus production, itself highly seasonal and subject to natural events. Most municipalities in the county, Anaheim and Santa Ana included, also sought to attract “clean” industries; aeronautics and aerospace matched the aesthetic requirements. Much like he encountered in Burbank, however, Disney had to overcome resistance from county leaders who felt his park might create an unwanted “honky tonk” atmosphere. See “Interview with Paul White, January 3, 1966,” Interviews: central section of Orange County, 1965-1966, Box 3, Series II Interviews and questionnaires, Leonard C. Moffitt files (MS-R116), UCI Special Collections (hereafter “LCM”). “Interview with Mr. Thornton,” December 17, 1965, Interviews: central section of Orange County, 1965-1966, Box 3, Series II Interviews and questionnaires, LCM. “Interview with Clarence Hoyles,” January 7, 1966, Interviews: central section of Orange County, 1965-1966, Box 3, Series II Interviews and questionnaires, LCM. “Interview with Keith Murdock,” [22 nov 1966], Interviews: central section of Orange County, 1965-1966, Box 3, Series II Interviews and questionnaires, LCM. Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 52-53.. Earnest W. Moeller, “The Evolution of Walt Disney’s Concept of an

presented their results to the Disneys, perhaps understanding the need to build confidence in the subdivision owned by a patchwork of owners. During the meeting Wood and Price discussed 40 different sites, including both the Ball Road Subdivision and the Harvey land further north. After the meeting, the Disney team and SRI went to look at the lots first hand.⁸² The presentation followed by seeing the land had a strong impression on Walt Disney. It was a powerful vision that merged two different ways of imagining the future park. The first was the vision that Disney and his artists had been working on in Burbank. The second was of numbers, graphs, and charts, and how Price and Wood narrated them in such a way as to suggest the inevitability of the site they recommended. It was perhaps the first time since he had paced the vacant lot across from the Burbank studio that he could imagine a real place upon which to build Disneyland.⁸³ The comments of Disney's friend and business associate, Art Linkletter, upon seeing the Anaheim site for the first time further reinforce this. After a long drive from Los Angeles, Linkletter, who was not privy to the SRI presentation, stood in disbelief that his friend had placed so much faith on a place that seemed as likely as it was not to be the best location for Disneyland, far away from the city "in a sleepy backwoods."⁸⁴

Although a land speculator momentarily threw these plans into disarray (Disney was so upset from this that he was ready to abandon the entire purchase and lose out on an option payment already made), the SRI team and WED enlisted the help of Anaheim's political leaders. They helped broker a solution where the county would close off Cerritos Avenue between Harbor Boulevard and West Street. The Disneys could then purchase as a single contiguous section plots to the south of Cerritos, thereby avoiding the land speculator.⁸⁵ To avoid further troubles, the Disneys dropped Coldwell Banker as their real estate agent and instead worked with local Anaheim agents. By April 1954, with the land purchased and Cerritos Avenue closed, the site for Disneyland had finally been secured.⁸⁶

The second piece of work, the feasibility study, further illustrates how Disney and SRI mutually built one another's confidence within the notional Disneyland. The feasibility study was intended to help sell the park concept to prospective investors and other institutional participants. But the research done by Wood and Price would also feed directly into WED, as it helped designers there (who had no experience with amusement parks) think through the challenges they faced designing attractions and other aspects of the park. Reciprocally, this work also gave Wood and Price valuable exposure to an industry in which they too had no prior experience.

Work on the feasibility study began in late 1953, with the SRI team visiting 10 amusement parks, museums, zoos, and even Tivoli in Copenhagen. In his analysis, Price relied

Amusement Park", An Historical Sketch, Formal Presentation July, 14 1980, 4, EWM. Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 13, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980," EWM.

⁸² Stanford Research Institute, "An Analysis of Location Factors for Disneyland, Prepared for Walt Disney Productions, Burbank, California" August 28, 1953, 2, EWM

⁸³ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 55-56.

⁸⁴ Art Linkletter quoted in *ibid.*, 80.

⁸⁵ Earnest W. Moeller, "The Anaheim Connection", An Historical Sketch, Formal Presentation July 14, 1980, 1, EWM.

⁸⁶ Earnest W. Moeller, "The Anaheim Connection", An Historical Sketch, Formal Presentation July 14, 1980, 1, 3, EWM. Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 71, 74-76, 79.. Roy O. Disney to Frank M. Miller, April 27, 1956, Documents --- Disneyland's Beginnings, EWM. Earnest W. Moeller, "An Historical Sketch, Formal Presentation July 14, 1980," EWM.

heavily on attendance data collected at the San Diego Zoo.⁸⁷ The information was put to use as Price produced it. The work was used to help close the deal with ABC as well as entice other prospective leases. WED's designers also used Price's information to help plan the park. For example, Wood and Price realized that attendance at individual rides could be increased through careful staging of the ride's line. They also recommended that WED incorporate more attractions than initially planned, so that guests would have enough options during periods of peak attendance at the park.⁸⁸

But there were doubts among WED's designers about SRI's recommendations. In particular, they were concerned about Price's basing of Disneyland's projected attendance upon the San Diego Zoo and other amusement parks. But, as Disney historian Todd Pierce notes, "the WED team began to incorporate Price's estimates wholesale, mostly because they had no alternative."⁸⁹ Price too felt uncertain about his numbers, and he sought to substantiate his findings through conference with leaders in the amusement park industry. He first met with Walter Knott, owner and operator of Knott's Berry Farm in neighboring Buena Park. Yet upon hearing Price describe Disneyland, Knott became mum and Price left with no information about Knott's own operation.⁹⁰ Wood and Price had another opportunity in November 1953, at the National Association of Parks, Pools, and Beaches meeting in Chicago. Several WED team members also went along, and near the end of the conference the group invited several prominent figures in the amusement park industry to their hotel suite where they presented the Disneyland concept. The WED and SRI team was stunned at the response, which was an unequivocal assertion that Disneyland "would be a financial disaster" from its expensive, unproven rides, lavish landscaping, non-revenue generating elements (such as the castle), and seated restaurants.⁹¹ Whatever confidence WED and SRI had in their numbers was dashed. It was only Disney's reply ("To hell with them")⁹² that work continued. The path was clear. Whether or not Price and Wood's research was accurate was beside the point. Disney had little else to give his designers, and the numbers from SRI were taken on faith alone.

In other contexts, however, SRI's findings were presented in a far different light. To drum up support among Anaheim voters to annex the Disneyland property necessary to secure critical utility connections, Wood described Price's work "a most comprehensive search" of the entire State of California, with "the 1/4 section" that was eventually acquired to be "first choice" (Wood was prone to exaggeration).⁹³ Another Anaheim resident, Earnest W. Moeller, also argued for annexation, leaning on SRI's reputation as a serious research institution and the "selection of the site came as the result of skilled analysis and research."⁹⁴ Price's work also became part of the Disneyland pitchbook, which along with Herbert Ryman's painting of the park (Figure 1.2) Roy used during his meetings with potential financial backers, including ABC.⁹⁵

⁸⁷ Ibid., 80-82.

⁸⁸ Ibid., 80-83.

⁸⁹ Ibid., 83.

⁹⁰ Ibid., 83-84.

⁹¹ Ibid., 84-86, Price, *Walt's Revolution!: By the Numbers*, 28-30.

⁹² Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 86.

⁹³ Board of Directors, Minutes, June 10, 1954, Documents --- Disneyland's Beginnings, EWM.

⁹⁴ Earnest W. Moeller to Board of Directors, Anaheim Chamber of Commerce, June 10, 1954, Documents --- Disneyland's Beginnings, EWM.

⁹⁵ Mannheim, *Walt Disney and the Quest for Community*, 14, Price, *Walt's Revolution!: By the Numbers*, 28-30, Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 59-70.

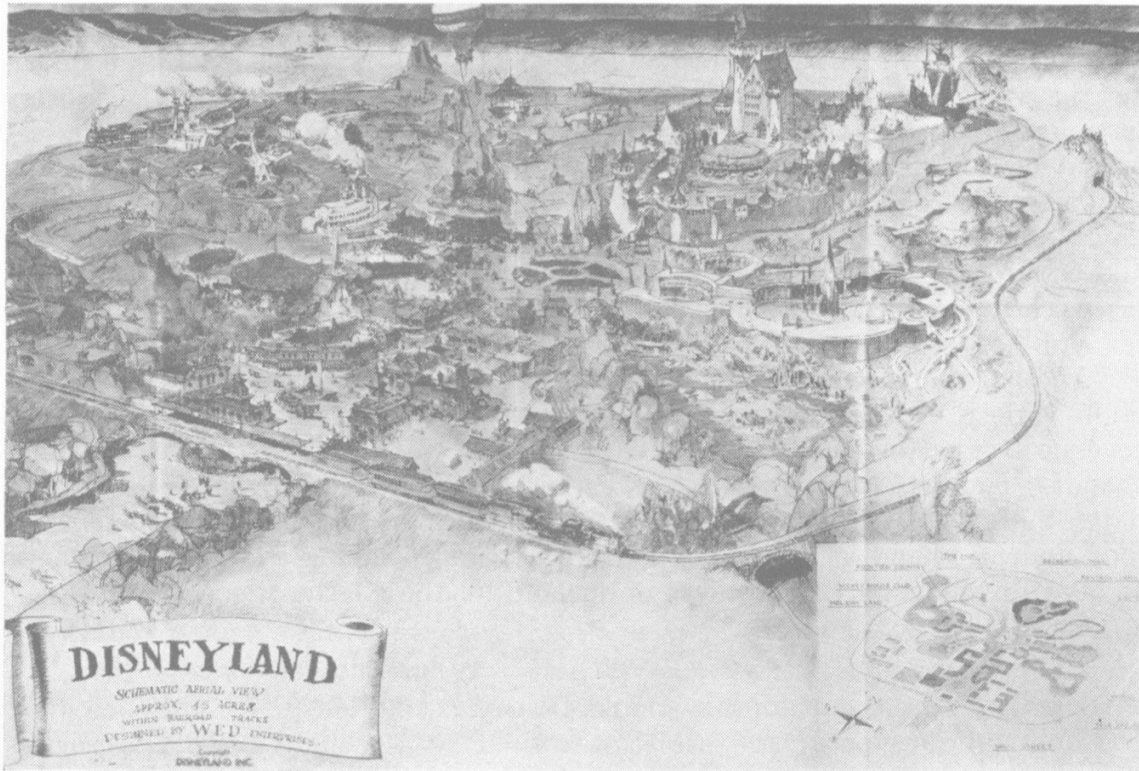


Figure 1.2. Painting of Disneyland concept done by Herb Ryman. Source: Platt, William J. "Industrial Economics and Operations Research at Stanford Research Institute." *Journal of the Operations Research Society of America* 2, no. 4 (1954): 411-418.

When Disneyland opened in July 1955, it was not an instant success. Rushed construction, union problems which led to embarrassing situations with restroom facilities, visitors' shoes becoming stuck in still-fresh asphalt all contributed to a sense of disaster.⁹⁶ Industry observers, especially investors back east, took pause at the park's numbers. This uncertainty had a negative impact on at least one other project of similar scope, Miami's Inter-American Cultural and Trade Center ("Interama"). Investors, skittish at the performance of Disneyland during its first few years, backed away from Interama's first bond sale.⁹⁷ But gradually over the rest of the 1950s, Disney worked on the park, both adding new attractions and reorganizing the park's operations. The impact this had on the studio was significant. By 1958, motion pictures accounted for only 38 percent of Walt Disney Studio's total revenue, with television following at 28 percent. Disneyland came to contribute 21 percent of the studio's total revenue in just three years after its opening.⁹⁸ By 1958, Wood and Price had too moved on into new ventures. Wood himself took his experience working on Disneyland by founding a new firm, Marco Engineering. He built a number of different amusement parks, including the Six Flags franchise which he began with Six Flags Over Texas. Wood also became involved in

⁹⁶ Marling, "Disneyland, 1955: Just Take the Santa Ana Freeway to the American Dream."

⁹⁷ Michael Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama," *The Florida Historical Quarterly* 86, no. 4 (2008).

⁹⁸ Gabler, *Walt Disney: The Triumph of the American Imagination*, 635.

themed residential communities, most famously purchasing the London Bridge and reassembling it, brick by brick, as part of his Lake Havasu community development.⁹⁹

Price took a different path. After a brief detour working for the Southern California industrialist Leo Harvey analyzing business deals and plant operations, he founded his own firm, the for-profit Economics Research Associates. Both Disney and Harvey played key roles in providing Price's new firm with much needed revenue. Price would soon take his experience working on Project Mickey and apply it with another icon of post-war America: the Century 21 Exposition in Seattle.

⁹⁹ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 4-5.

Chapter Two

The Century 21 Exposition in Seattle, 1962

From the end of World War II through the mid-1960s, America's businessmen, policy makers, and many intellectuals felt a sense of confidence in the path the nation was taking. Justified by the prominent role the nation achieved on the world stage after 1945, this "cold war consensus...trumpeted the benefits of the American way of life:" democratic capitalism was creating a new affluence in a mass middle-class, spreading social good to the many in ways communism could not.¹ One of the ways in which America's business and political establishments spread this message of confidence in the nation's future were through what the historians Robert W. Rydell, John E. Findling, and Kimberly D. Pelle have called the "Atomic Age" world's fairs: those domestic expositions hosted by America in the decades after 1945. The first of these, the 1962 Seattle World's Fair (also known as Century 21) is remembered today as an event that celebrated America's strengths in science, technology, industry, and the ability for mass affluence to spread the benefits of those to all.²

Yet those Seattle businessmen and politicians involved in planning for the exposition (Figures 2.1 and 2.2) themselves lacked confidence about whether their fair would itself be successful, if not in its cultural mission but at a much more fundamental level: its economics. Like other new developments in the built landscape of Cold War America, such as shopping centers and theme parks, Century 21 was a highly capitalized, financially risky venture, and these men were hard-pressed to find a previous exposition that could serve as an example to follow that would help insure their financial success.³ Bringing a world's fair to light also meant

¹ For discussions on the intellectual responses to mass affluence and mass culture, see Horowitz, *The Anxieties of Affluence: Critiques of American Consumer Culture, 1939-1979*, Paul R. Gorman, *Left Intellectuals & Popular Culture in Twentieth-Century America* (Chapel Hill: University of North Carolina Press, 1996), Quote is from Horowitz, *The Anxieties of Affluence: Critiques of American Consumer Culture, 1939-1979*, 7. Cohen, *A Consumer's Republic: The Politics of Mass Consumption in Postwar America*. takes a broader view of the history of mass consumption and its impact on post-1945 American society, Lears, *Fables of Abundance: A Cultural History of Advertising in America*. reframes discussions about the role of advertising in American culture, On the shift from producer-centric to consumer-centric thinking in economic thought see Kathleen G. Donohue, *Freedom from Want: American Liberalism and the Idea of the Consumer*, New Studies in American Intellectual and Cultural History (Baltimore: Johns Hopkins University Press, 2003), Ellen Furlough and Carl Strikwerda, *Consumers against Capitalism?: Consumer Cooperation in Europe, North America, and Japan, 1840-1990* (Lanham, Md.: Rowman & Littlefield Publishers, 1999). comparatively analyzes consumer cooperatives as an alternative to consumer capitalism in America, Europe, and elsewhere.

² Scholarship on fairs and expositions can be roughly divided into two groups: that focusing on fairs within the United States, and that focusing on fairs held outside the United States in which the US was a participant. In general, domestic fairs held during the Cold War did not highlight the US-USSR conflict, but instead focused on the benefits of the American way of life. For an overview of the domestic fairs which also provides a useful periodization, see Rydell, Findling, and Pelle, *Fair America: World's Fairs in the United States*. Other scholars have looked to the domestic fairs with more focused questions. Julie K. Brown, *Health and Medicine on Display: International Expositions in the United States, 1876-1904* (Cambridge, MA: MIT Press, 2009), Gilbert, *Redeeming Culture: American Religion in an Age of Science*. both take exhibits at fairs as a way to explore the public meaning of science and medicine. Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*. looks at Century 21 as an example of post-war planning of urban environments which starts in the American West and then spreads elsewhere in the United States. An excellent overview of fairs promoting the idea of "inter-American" relations may be found in Robert Alexander Gonzalez, *Designing Pan-America: U.S. Architectural Visions for the Western Hemisphere*, 1st ed., Roger Fullington Series in Architecture (Austin Tex.: University of Texas Press, 2011). While the domestic fairs may have sought to tone down the US-USSR confrontation, instead emphasizing the benefits of the American way, fairs abroad were not so subtle. The most famous example of the US-Soviet clash were the so-called "Kitchen Debates" between Vice President Richard Nixon and Soviet Premier Nikita Khrushchev at the American National Exposition held in Moscow, 1958. Jack Masey, chief of design at the United States Information Agency, was closely involved in many of these efforts abroad. For his personal account, see Jack Masey and Conway Lloyd Morgan, *Cold War Confrontations: US Exhibitions and Their Role in the Cultural Cold War* (Baden, Switzerland: Lars Müller Publishers, 2008). On the history of the USIA, including projects outside of expositions, see Nicholas John Cull, *The Cold War and the United States Information Agency: American Propaganda and Public Diplomacy, 1945-1989* (Cambridge; New York: Cambridge University Press, 2008). The "Unfinished Business" exhibit at the US Pavilion at the 1958 Brussels fair was generally viewed as a debacle among observers domestically; Gilman, *Mandarins of the Future Modernization Theory in Cold War America*. discusses the role of MIT Economics professor Walt W. Rostow in the design of this exhibit.

³ One example of a successful fair was the 1933 "A Century of Progress" held in Chicago. Planning for the Chicago fair began in 1927; it was built and opened in the midst of the Depression, yet still turned a profit. Noting the exceptionality of this, Lenox R. Lohr, the exposition's general

gathering together a diverse, and often conflicting, set of interests: local, state, and federal politicians; business executives; civic groups; and foreign governments. Fair promoters thus needed a way to build the confidence needed to move the project forward not only among themselves but also potential stakeholders to make it possible. Like contemporary American culture itself, the planners of Century 21 demanded a level of certainty, even assurance, of something speculative and intrinsically forward-looking. In short, to make the Seattle World's Fair possible, planners needed a confidence man that as C. V. Wood, the one-time manager of Stanford Research Institute's Southern California office had once remarked, actually "delivered the goods."⁴



Figure 2.1. Portrait of department heads, Seattle World's Fair, 1962: (back row, from left) Russell Mowrey (controller, 1959-1961), Clayton Young (site development), Donald Foster

manager and later president of Chicago's Museum of Science and Industry, wrote a book documenting the operational history of the fair in the hopes that it would be of use to future planners; see Lenox R. Lohr, *Fair Management: The Story of a Century of Progress* (Chicago: The Cuneo Press, Inc., 1952). Years after the Seattle fair concluded, Ewen C. Dingwall, Century 21's General Manager, noted during an interview that Lohr's book "was influential" in planning efforts at Seattle; see John M. Findlay, "Paraphrased Transcript of Interview with Ewen C. Dingwall," interview date August 19, 1985, final transcript April 24, 1989, V.F. 1659, Dingwall, Ewen C., Accession 0420-002, Ewen C. Dingwall papers, University of Washington Special Collections (hereafter "ECD").

⁴ Wood quote is from Price, *Walt's Revolution!: By the Numbers*, 131. As manager of SRI's Southern California office, Wood oversaw "Project Mickey," the internal codename SRI used for the work the Institute did on the location and feasibility studies for Disneyland. On "Project Mickey" and other Disney projects, see Chapter three of this dissertation. For accounts by former SRI vice presidents on SRI's role in Disneyland's planning and construction, see Nielson, *A Heritage of Innovation: Sri's First Half Century*, 14-17-14-20, Gibson, *Sri, the Take-Off Days: The Right Moves at the Right Times*, 150. For other accounts on SRI's involvement with Disneyland, see Gabler, *Walt Disney: The Triumph of the American Imagination*, 524, Marling et al., *Designing Disney's Theme Parks: The Architecture of Reassurance*, Mannheim, *Walt Disney and the Quest for Community*, 73, Andrew Reovan, "Theme Park in the City: Disneyland and the Aesthetic of the 'Anaheim Resort'" (Stanford University, 2008), 13, Thomas, *Building a Company: Roy O. Disney and the Creation of an Entertainment Empire*, 186-189.

(exhibits), Frederic Schumacher (operations), Jay Rockey (public relations), Donald Fry (underwriting), George Whitney (concessions); (front row, from left) Harold Shaw (performing arts), Ewen Dingwall (vice president and general manager), Joseph Gandy (president), Harry Henke III (administration). Source: Image 1965.3598.9.43, Walter Straley Century 21 Exposition Photograph Collection, Museum of History & Industry, Seattle, WA.



Figure 2.2. Edward E. Carlson, Chairman of the Seattle World's Fair Commission (front row, 3rd from left), surrounded by commission members on the Century 21 Exposition grounds, Seattle, 1962. Source: Image SEA3139, Seattle Photograph Collection, University of Washington Special Collections.

That someone was the economics consultant. A descendant of the associational movement of the 1920s, the economics consultant, as an outside expert, facilitated confidence on behalf of and for their clients.⁵ They deployed in their work a variety of methods, ranging from straightforward arithmetic and statistics, to newer techniques that emerged during and after World War II such as operations research and systems analysis. They deployed their technical

⁵ On Hoover's associationalism and inter-war economic planning, see Guy Alchon, *The Invisible Hand of Planning : Capitalism, Social Science, and the State in the 1920s* (Princeton, N.J.: Princeton University Press, 1985), Friedman, *Fortune Tellers : The Story of America's First Economic Forecasters*, 166-193, Hawley, "Herbert Hoover, the Commerce Secretariat, and the Vision of an "Associative State," 1921-1928.", McKenna, *The World's Newest Profession : Management Consulting in the Twentieth Century*, 39-43.

skills to build confidence among stakeholders⁶ in projects of great uncertainty, whether these were supporting the strategic decisions of business executives, the development of regional economies - or the grand international expositions of the 1960s, such as the 1962 Seattle World's Fair. For these projects to happen, there needed to be a vision of those projects' potential future success. The economics consultant performed the role of confidence building through their technical virtuosity and objective standing as the outside expert.

The story that follows examines the role of the economics consultant in making the first world's fair held in America after 1945 possible: the Century 21 Exposition, also known as the 1962 Seattle World's Fair. It traces how these outside experts built confidence among those involved in the financing, planning, and operations of these expositions. Consultants from two new firms, including Bill Royce and Dick Raymond of Stanford Research Institute's (SRI) Pacific Northwest office, and Price's fledgling Economics Research Associates (ERA),⁷ built confidence among staff and executives at Century 21 by projecting the estimated attendance for the fair. Such projections were the foundation for almost every other aspect of fair planning and operations. When doubt arose about those estimates among Century 21's staff because of changes in the fair's overall program and direction, they would turn again to outside experts to help them rebuild confidence in their mission and move forward.

In April 1962, the Century 21 Exposition opened its gates to visitors from across the nation and the world. With an overall theme aimed at promoting American science, exhibits at the fair such as the Federal Science Pavilion and "Century 21," as well as a Space Needle and Alweg Monorail, all projected an air of confidence in the nation's future as it marched onwards to the next century. This message was particularly germane in the aftermath of Sputnik, when the American public felt unsettled about their nation's ability to hold back the communist threat.⁸ Yet the Seattle fair did include some of the trappings of earlier world's fairs. In addition to the national pavilions and industrial exhibits, there were an amusement zone with games and rides, and "ethnic eateries." The fairgrounds even hosted "Fantasia, an 'authentic' Egyptian belly dancer," until public outcry led fair promoters to quietly remove her from the exposition's program.⁹

⁶ Don Nielson points out that the use of the word "stakeholder" to refer to any individual or group with a "legitimate claim" or "natural interest in an enterprise" outside of the owners (or shareholders) originated at Stanford Research Institute around 1963. Nielson also contrasts SRI's use of stakeholder against Milton Friedman's use of shareholder, to illustrate the differences between SRI and Friedman about what groups and individuals "a corporation is beholden to" in its endeavors. See Nielson, *A Heritage of Innovation: Sri's First Half Century*, 14-14.

⁷ SRI's headquarters was and still is located in Menlo Park, CA. At the time, the Institute had several regional offices, including the Pacific Northwest office in Portland, OR. ERA was founded by an SRI alumnus, Harrison "Buzz" Price, and was based in Los Angeles.

⁸ Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*, Gilbert, *Redeeming Culture: American Religion in an Age of Science*, 297-308, Rydell, Findling, and Pelle, *Fair America: World's Fairs in the United States*, 100-105.

⁹ Gilbert, *Redeeming Culture: American Religion in an Age of Science*, 298.



Figure 2.3. View of the 1962 Seattle World’s Fair from downtown Seattle looking northwest towards the Queen Anne neighborhood. Visible are two icons of the exposition’s “Space Age” theme, the Space Needle (middle ground right) and Alweg Monorail (running from foreground left to center). Source: SEA3319, PH Coll 1021.66, Seattle Photograph Collection, University of Washington Special Collections.

But Century 21 differed from previous fairs in that it represented a new type of development in the post-1945 American West: what the historian John Findlay has called “Magic Lands.” Magic Lands were closely planned and tightly controlled developments, an expression of the desires of Westerners “to protect the freshness of western cities” from the region’s dramatic and at times seemingly uncontrolled growth. Examples included shopping centers and master planned communities. The first Magic Land was Disneyland itself, in Anaheim, California. The archetypical theme park, Disneyland, with its enclosed and highly curated, manicured space, invited visitors to an experience far removed from that of urban cities.¹⁰ With the case of Century 21, the particular goals of the fair’s boosters were not only to host a successful fair in Seattle, thus overcoming the city’s “reputation as provincial and unsophisticated,” but also be left with a new civic center, the centerpiece of a revitalized and

¹⁰ Avila, *Popular Culture in the Age of White Flight : Fear and Fantasy in Suburban Los Angeles*, 106-144, Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*, 2-13, 215, Marling, "Disneyland, 1955: Just Take the Santa Ana Freeway to the American Dream.", Marling et al., *Designing Disney's Theme Parks : The Architecture of Reassurance*.

vibrant downtown.¹¹ Like their peers developing other “Magic Lands,” the Seattle fair promoters believed that careful management and planning were key to achieving their own goals, thus gaining the confidence needed to move forward with the fair.

¹¹ Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*, 215, 220-223. In addition to the civic center and a revitalized downtown, fair promoters also hoped the fair would attract new industry to the region so as to diversify away from the at the time irregular business cycles of the Boeing company and federal defense spending. See *ibid.*, 219-220.



Figure 2.4. Aerial view of the Century 21 site before construction began. Consultants from Stanford Research Institute and Economics Research Associates helped maintain confidence among fair planners in the fair's future success, transforming the site into that found in Figure 2.5. Source: UW 36402, PH Coll 463, Ewen C. Dingwall Century 21 Exposition photograph collection, University of Washington Special Collections .



Property of MSCUA, University of Washington

Figure 2.5. View of Century 21 Exposition grounds in 1962. Prominent in the center is the Space Needle, to the right is the U.S. Science Pavilion. In the foreground is the “Century 21” pavilion. Source: UW19600z, Seattle Collection, University of Washington Special Collections.

To that end, shortly after Washington’s state legislature formed a World Fair Commission in 1955 commissioners reached out to Stanford Research Institute, a non-profit research institute founded in 1946 as an offshoot of Stanford University. SRI was the merger of two separate earlier efforts in Northern and Southern California to found a non-profit institute that would provide research services to industry and commerce.¹² Members of the World Fair Commission, including Edward Carlson, a Seattle hotelier,¹³ had reviewed a study that SRI’s

¹² See Chapter 1 of this dissertation for a discussion of SRI’s early history. Weldon “Hoot” Gibson, a long-time Institute vice-president, published two volumes documenting SRI’s history up through the mid-1950s: Gibson, *Sri, the Founding Years : A Significant Step at the Golden Time*, ———, *Sri, the Take-Off Days : The Right Moves at the Right Times*. Don Nielson, another long-time VP, published a third book which provides a much broader overview of the Institute’s scope of research activities, and also documents SRI’s history up through the 1990s. See Nielson, *A Heritage of Innovation: Sri’s First Half Century*.

¹³ Carlson’s Western Hotels would later change names to Westin Hotels. He would also become head of United Airlines when Westin and United merged in the early 1970s; see “Edward E. Carlson Is Dead at 78; Former Leader of United Airlines,” *New York Times*, April 6, 1990, A20.

Pacific Northwest office completed for a proposed Oregon Centennial Exposition. The commissioners were thoroughly impressed with SRI's report, yet lacked the funds to pay SRI to conduct an equivalent study for their own proposed fair. They instead opted to have two researchers from the University of Washington conduct an opinion poll, the findings of which were presented to the Washington state legislature in early 1957.¹⁴ Based on this study, state legislatures authorized a bond to co-fund development of the fair along with the city of Seattle, whose voters had earlier in 1956 also passed a bond issue for a new civic center to be located on the fairgrounds.¹⁵

With the state and city now backing the fair's construction program, and with new funding to proceed with additional planning work, the Commission next looked to the problem of financing the fair's operations. In the summer of 1957, commissioners decided to finance the fair's operations through contributions from local businesses and banks.¹⁶ In discussions with finance experts, Ed Carlson, the chairman of the World Fair Commission, and Ewen C. Dingwall, who had recently been appointed the fair's Project Director (and would later become its general manager), found that above all else, potential investors expressed concern that previous world's fairs, including the New York and San Francisco fairs of 1939-1940, had run in the red. The New York fair was especially notorious for returning back to investors a paltry 40 cents per dollar contributed. Thus, while local industry and banking leaders supported the Seattle fair in concept, they lacked confidence in knowing whether their investments would be return a profit, let alone if they would get most of their money back. In response, commissioners had no answer, as they themselves did not know whether or not their venture would be successful. They turned to SRI to answer these questions.¹⁷

By September 1957 two consultants from SRI's Pacific Northwest Office, Dick Raymond and Bill Royce, began working on the problem of demonstrating the fair's potential future economic performance. Central to this work were attendance projections. Realizing that planning for the fair was very much still in its early stages, and noting that a long-term goal was a new, permanent civic center near Seattle's downtown, Raymond and Royce suggested that the fair's promoters consider a permanent rather than temporary exposition. At a Commission meeting held on October 21, 1957, Raymond presented his initial work on this. He first went over the economic performance of the 1939 fairs of San Francisco and New York. Acknowledging that both fairs had lost money, if one took operations separately, noted Raymond, the two fairs were in fact profitable ventures - a surprise to several commissioners. The main reasons for this, suggested Raymond, were "too optimistic" attendance forecasts, high construction costs, and the outbreak of war in Europe. At this point, Raymond began the main act of his performance as an objective expert: he held an open discussion with the other Commission members on the differences between a two-season fair (what the Commission was contemplating at the time) and

¹⁴ The two UW researchers came from the University of Washington's Bureau of Business Research and its business school. See *World Fair Commission Report to the honorable Arthur B. Langlie, Governor, and the 1957 Session of the Legislature, State of Washington*, Olympia, WA: 1956, 4-5, World's Fair Commission Report, 1957, Box 16, Accession 0420-001, ECD. State of Washington World Fair Commission Meeting, December 15, 1955, 3-4, Minutes of State of Washington World Fair Commission Special Meeting, December 21, 1955, 1-2, Folder World's Fair Commission Minutes, 1955, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

¹⁵ Minutes of State of Washington World Fair Commission Meeting, November 9, 1956, 3, World Fair Commission Minutes, 1956, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

¹⁶ Minutes, State of Washington World Fair Commission Meeting, June 29, 1957, World Fair Commission Minutes, 1956, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

¹⁷ Minutes, State of Washington World Fair Commission Meeting, July 25, 1957, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

a permanent fair. During this discussion, Raymond performed “a detailed analysis of the statistical matters” along with “detailed financial summaries” of both scenarios. He continued his performance, presenting curves that broke down probable attendance at the fair on a daily and monthly basis, both for a temporary fair and the permanent exposition.¹⁸

Raymond gained full confidence among the fair’s planners in the idea of a permanent fair the following month, at a joint meeting of the World Fair Commission and the Commission’s Design Standards Advisory Board, or DSAB.¹⁹ Joining Raymond at this meeting was his boss and the manager of SRI’s Pacific Northwest office, Bill Royce. The two SRI consultants strongly felt “that serious effort should be made to develop an entirely new concept and approach for the Washington State Fair.” Noting some of the vexing challenges the DSAB had been facing in working out the economics of the building program for the fair and civic center, Royce and Raymond noted that “there appeared to be no necessity” to limit a world’s fair to two years. Royce and Raymond argued that a new trend in expositions appeared to be emerging, offering both Disneyland and Miami’s “Inter-Rama,” a proposed permanent exposition just outside that Florida city, as examples.²⁰ This new trend, argued Royce and Raymond, was supported by the economics of large scale, capital intensive, public-private ventures. “[A] permanent, living exposition would,” said Raymond, “[not only] substantially alter and improve the concept of the Civic Center and the relationship of the entire World Fair program to the Civic Center,” it “would [also] make possible a long-term amortization of investment” required.²¹ Furthermore, a permanent exposition would enable the Commission to remain closer to its original idea of the fair as a regional event, as “a substantial portion of the attendance at a fair will inevitably come from the trading area of the city in which the fair is held...”²²

As during the previous month’s meeting, Raymond and Royce proceeded with a performance of mathematical virtuosity. Raymond gave a reprise of his previous performance of curves, charts, and other statistics illustrating the economic feasibility for a permanent fair by presenting low and high curves for projected attendance (Figures 2.6 and 2.7). Raymond and

¹⁸ Minutes, Washington State World fair Commission Meeting, September 16, 1957, World Fair Commission Minutes, 1957, Box 1, Series I. Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, Washington State World Fair Commission, October 21, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, Washington State World Fair Commission, November 25, 1957, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Richard H. Raymond, “Memorandum No. 3, Project No. 1-2321,” ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 001, ECD.

¹⁹ The Design Standards Advisory Board, or DSAB, consisted of Seattle city planners, architects, and other local officials. The DSAB was charged with determining how to put together the fair’s program in light of the differing needs of Seattle’s various civic groups for a permanent civic center; on DSAB, see Minutes, State of Washington World Fair Commission Meeting, July 1957, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I. World Fair Commission, C21. On the impact of Sputnik on the long-range planning for Seattle’s post-fair civic center, see Findlay, *Magic Lands: Western Cityscapes and American Culture after 1940*, 228-229.

²⁰ On Interama, see Gonzalez, *Designing Pan-America: U.S. Architectural Visions for the Western Hemisphere*, Michael Hoover, “Before Disney Arrived: Florida’s Ill-Fated Attempt to Build Interama,” *The Florida Historical Quarterly* 86, no. 4 (2008).

²¹ Minutes, Joint Meeting World Fair Commission, Civic Center Advisory Commission, Design Standards Advisory Board, November 11, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

²² Minutes, Joint Meeting World Fair Commission, Civic Center Advisory Commission, Design Standards Advisory Board, November 11, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, Design Standards Advisory Board, December 2, 1957, Minutes, DSAB, Box 14, Accession 001, ECD. Minutes, Washington State World Fair Commission Meeting, September 16, 1957, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, Joint Meeting WFC, CCAC, DSAB, November 11, 1957, 3, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, State of Washington World Fair Commission, December 9, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

Royce developed their projections for the Seattle fair by first analyzing the attendance of the 1933 Chicago “Century of Progress,” and the 1939 San Francisco World’s Fair. They then divided attendees into residents and tourists, developing values (the “Estimate of Average No. of Visits to Fair”) for each category of attendee. Finding that the values for the San Francisco and Chicago fairs were close to one another, and also resulted in a higher projected attendance when applied to Seattle, the SRI analysts used those for developing the “High Estimate” attendance of 12,236,250.²³ Royce and Raymond’s methods were not the cutting edge of late 1950s management science. Rather, they employed statistical methods typical for analyzing contemporary business problems. Yet despite not deploying the most technical nor recent methods in their work, they gained the confidence of those in attendance, who concluded that a permanent fair (or “living exhibition” as SRI called it) “is very much worth [further] exploration.”²⁴

²³ William S. Royce, "A Proposal for Research: Research Services for Washington State World Fair, Proposal No. I-57-257," Stanford Research Institute, August 14, 1957, ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 001, ECD.

²⁴ Minutes, Joint Meeting World Fair Commission, Civic Center Advisory Commission, Design Standards Advisory Board, November 11, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21.

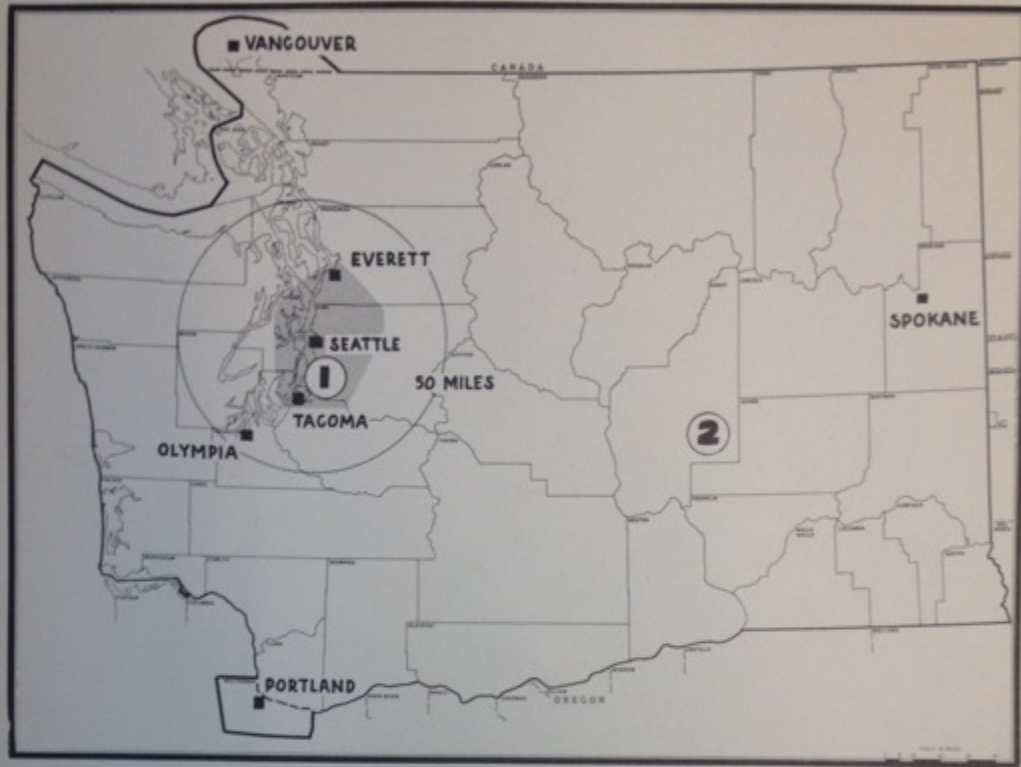


Figure 1

AREA SURROUNDING SEATTLE

- ① Includes population within one hour driving range of Seattle Civic Center
- ② Includes population within six hours driving range and outside of Area #1

Figure 2.6. In their analysis to project attendance for the Seattle fair, SRI consultants used a 50 mile drive radius to divide the resident market into two parts, based on the premise that those closer to the event would tend to more repeat visits than those living further away. Tourists were treated similarly depending on where in the state they were. Source: Memorandum No. 3, Project No. I-2321, Stanford Research Institute, December 4, 1957, ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 0420-001, Ewen C. Dingwall papers, University of Washington Special Collections.

Table VII
LOW AND HIGH ESTIMATE OF ATTENDANCE AT HYPOTHETICAL
120-DAY MAJOR FETE IN SEATTLE, 1961
COMPARED TO SELECTED PREVIOUS WORLD'S FAIRS
(Part II)

Attendance Factor	Estimate of Average No. of Visits to Fair	Seattle (High Estimate)	Chicago (170 days) 1933 ^{1/}	San Francisco (254 days) 1939 ^{2/}
BASIS B				
1. Number of residents in Area No. 1	2.5	1,108,000x2.5= 2,770,000	4,500,000x2.5= 11,250,000	1,428,500x2.5= 3,571,250
2. Number of residents in Area No. 2	1.0	3,335,000x1.0= 3,335,000	9,400,000x1.0= 9,400,000	2,100,000x1.0= 2,100,000
3. Number of tourists in city during fair period	2.5	3,150,000x75% ³ x2.5= 5,906,250	1,000,000x70% ³ x2.5= 1,750,000	1,138,000x80% ³ x2.5= 2,276,000
4. Number of tourists in state during fair period	.3	992,000x75% ³ x.3= 225,000	300,000x70% ³ x.3= 63,000	810,000x80% ³ x.3= 195,000
5. Total Attendance Estimate		12,236,250	22,463,000	8,142,250
6. Actual Attendance		--	22,600,000	9,700,000
7. Original Estimate of Attendance		--	--	14,000,000

1/ Estimates based on 1934 population and tourist data.
2/ Estimates based on 1940 population and tourist data.
Note: All attendance figures represent paid admissions only.

Figure 2.7. Page from SRI's summary memorandum following their presentations to the World Fair Commission in October and November 1957. SRI's Dick Raymond, working under Bill Royce, developed the high attendance projection based on the actual attendance of the 1933 Chicago Century of Progress and the 1939-1940 San Francisco World's Fair. The "Area No.1" and "Area No. 2" resident populations refer to those living within a one hour drive time to the proposed fair site and those living more than one hour away; see Figure 2.6. Source: Memorandum No. 3, Project No. I-2321, Stanford Research Institute, December 4, 1957, ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 0420-001, Ewen C. Dingwall papers, University of Washington Special Collections.

A permanent exposition in Seattle was not to be, however. In early 1958, the Commission decided to pursue sanctioning by the Bureau of International Expositions, or BIE, an international body formed in 1924 to regulate world's fairs among its signatory nations, and whose blessing would help insure international participation.²⁵ After almost two years' of negotiations between the BIE and the Seattle fair promoters, it became apparent that the BIE would not budge on allowing a fair to run longer than a single, six month season. SRI's concept of a "living exhibition" in Seattle had to be abandoned. But the new direction of the Commission to pursue BIE sanctioning also reveals that there was not complete confidence that a permanent exposition would solve the fair's future economic challenges. Despite SRI's recommendations, it

²⁵ The BIE was founded when member nations signed what was called the 1924 Paris Convention. The United States was not a signatory until the 1964, when planning for the American Bicentennial began. While most work on expositions does reference the BIE, no scholarly history of the institution itself has yet been written. For background on the BIE see "Who We Are," Bureau of International Expositions, <http://www.bie-paris.org/site/en/home/who-we-are>.

appeared to the Commission that foreign participation was more crucial to the fair's future success.²⁶

By changing the length of the exposition from two seasons to one, however, Century 21's planners created a crisis of confidence among themselves, again on the point of attendance. SRI had not provided projections for a single season exposition, and was unwilling to simply revise their original study, citing the need for a completely new one.²⁷ In response, staff members developed ad hoc justifications, based on SRI's original two-season estimates, for a single season fair's attendance. One staff member involved in these justifications asserted that "that Stanford's estimate of eight million to twelve million paid admissions for the first year of a two-year exposition was still valid for a one-year exposition," especially considering the new elements added to the fair's overall program since SRI first did their projections."²⁸ Ironically enough, this was sufficient for lobbying and other public relations efforts conducted by the fair's top management, board of directors, and the Commission. For example, Century 21's president, Joseph E. Gandy, went on a road show with these ad hoc justifications in hand. At one such speech given on September 9, 1959 before the Seattle Rotary, Gandy noted that if only "60 per cent of the minimum attendance estimated by Stanford Research Institute [emphasis in original]," then the state would have "more than recovered in new taxes its original investment of \$7,500,000."²⁹ In the language of Gandy's boosterism, loose assumptions such as these were acceptable.

Yet among fair staff, such loose assumptions led to a deadlock. A crisis built over the first half of 1960, reaching a head that summer. In January, the fair's Steering Committee expressed doubts at their ability to set firm numbers they could use in negotiations with potential exhibitors.³⁰ Negotiations with the ABC Vending Corporation, for example, illustrate how uncertainty now plagued the ability for planners to move forward. Century 21 had asked ABC to submit a proposal for a wide range of visitor services, ranging from snack bars and beer stands to vending machines selling souvenirs and photographic services for visitors. ABC proposed that a minimum rent of 12.5% gross sales would go to the fair, 10% to ABC, with the remaining divided equally between ABC and the fair. ABC called this remainder the "bonus rental." Knowing what the "bonus rental" could be was a pivotal point in the negotiations. Yet, perhaps unsurprisingly, ABC would not provide an estimate, noting that doing so depended upon "facilities made available" to ABC by the fair as well as the validity of the fair's attendance

²⁶ Minutes, Joint Meeting World Fair Commission, Civic Center Advisory Commission, Design Standards Advisory Board, November 11, 1957, 2, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, Washington State World Fair Commission, November 25, 1957, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21 Records, Minutes, State of Washington World Fair Commission, December 18, 1957, 1, World Fair Commission Minutes, 1957, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Minutes, State of Washington World Fair Commission, February 21, 1958, 1, World Fair Commission Minutes, 1958, Box 1, Series I Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I World Fair Commission, C21. Richard H. Raymond, "Memorandum No. 2, Project No. I-2321," Stanford Research Institute, November 14, 1957, ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 001, ECD. Richard H. Raymond, "Memorandum No. 3, Project No. I-2321," Stanford Research Institute, December 4, 1957, ECD - Personal, Project Development, SRI (4 sections complete). Box 9, Accession 001, ECD.

²⁷ Minutes, Steering Committee, December 11, 1959, Minutes - Steering Comm. Aug - Dec. 1959, Accession No. 1738-001, Joseph E. Gandy papers, University of Washington Special Collections (hereafter "JEG"). Minutes, Steering Committee, December 18, 1959, Minutes - Steering Comm. Aug - Dec. 1959, JEG.

²⁸ Minutes, Steering Committee, December 18, 1959, Minutes - Steering Comm. Aug - Dec. 1959, Box 3, JEG.

²⁹ Joseph E. Gandy, "Civic Center," Speech, September 9, 1959, 16, Speeches and Writings, Sept. 9, 1959, Box 4, JEG.

³⁰ Minutes, Steering Committee, January 12, 1960, Minutes - Steering Comm. Jan. 1960 - March 1960, Box 3, JEG.

projections.³¹ With SRI unwilling to revise their original projections to a single season, and such uncertainty about the fair's future performance stalling critical negotiations with prospective concessionaires and exhibitors, the fair's management would soon find a replacement for SRI.

Out of these endless disputes within Century 21 over the validity of SRI's attendance projections, and the paralyzing effect this had on fair construction and planning, George Whitney, Jr., head of the fair's concessions and amusements, brought in Harrison "Buzz" Price's Economics Research Associates in the summer of 1960. Whitney had first met Price when the latter worked at SRI's Southern California office on "Project Mickey," the internal code name given to the location and feasibility studies the Institute had completed for Disneyland.³² At that time, Whitney himself had been hired as a consultant by the Disney organization to bring in his expertise in the amusement park industry to the operation of their new theme park.³³ There was some dissent within Century 21 whether or not Buzz's ERA should even be hired. At a staff meeting in late August 1960, "[t]he general consensus was that most of the [proposed] services [from ERA] could be handled by the firms and personnel already contracted by Century 21 Exposition."³⁴ But this dispute emphasized for Century 21's executives the need for a party external to their group to build confidence and remove uncertainty, and a contract was soon signed with ERA.

The first task of ERA was to evaluate the soundness of the SRI attendance projections. Price assigned this job to Bob Lorimer who, like Buzz, was also an SRI alumnus. Lorimer, more than a virtuoso with numbers, also understood the dual nature of the crisis of confidence within Century 21. On the one hand, the public relations and underwriting campaigns had proceeded with the estimated single season attendance which the fair's staff had developed on their own, based off assumptions and SRI's original two-season projections. On the other, however, the fair's staff held no confidence in their own numbers, and disputes arose among staffers about the use of those projections in other aspects of the fair's planning. He therefore attacked the sloppiness of the SRI researchers, especially Royce and Raymond's idea of a permanent exposition. Lorimer claimed that the SRI consultants had made such recommendations "without original research," based solely on the "opinions of 22 people interviewed." Furthermore, argued Lorimer, SRI's justification for a permanent exposition was "typically long-hair, expounding on the era of leisure and the sociological need of men for festivals." With one exception, Disneyland's general manager, "the people interviewed were better qualified to talk theory" instead of whether such a concept could actually work and draw the necessary crowds. Yet Lorimer was also quick to praise his former colleagues, admitting they did "a careful job of estimating the attendance." Nonetheless, Lorimer proceeded to dismember those projections, which were "based on ... risky assumptions...." He concluded that "[o]ver-estimating

³¹ ABC Vending Corporation to Department of Concessions, July 12, 1960, ECD Personal - C21, Concessions, Miscellaneous, Box 1, Accession 001, ECD.

³² See Chapters 1 and 4 in this dissertation for more on the work SRI and ERA did for the Disney organization.

³³ On Project Mickey see Nielson, *A Heritage of Innovation: Sri's First Half Century*, 14-17-14-20. Barry Upson to Edward E. Carlson and Joseph E. Gandy, December 15, 1959, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. Bruce R. Culver, Memorandum, June 27, 1960, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. Barry Upson to Edward E. Carlson and Joseph E. Gandy, December 15, 1959, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. Barry Upson to All Concerned, "Attendance", July 25, 1960, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. Robert D. Ashley, Memorandum, August 15, 1960, ECD Personal - C21, Concessions, Miscellaneous, Box 1, Accession 001, ECD. Robert L. Lorimer to Buzz, September 27, 1960, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD.

³⁴ Memorandum, August 22, 1960, Status Report - Personal, Box 14, Accession 001, ECD.

attendance” had been a chronic problem for promoters of world’s fairs. SRI, who had underestimated attendance at the Oregon Centennial by 50%, too had fallen into this trap.³⁵

II - ATTENDANCE
 B - Total Attendance

Century 21 Exposition
November 7, 1960

Table II - 3

RELATION OF CENTURY 21 ATTENDANCE PROJECTIONS
TO POPULATION AND TOURISM GROWTH

Method of Projection	Attendance in Millions
I. <u>Attendance estimate based on proportional increase in number of visitors with growth in population and tourism, 1940 - 1961</u> 1933 and 1940 penetration factors applied to 1961 Washington population and tourism	10.0
II. <u>Attendance estimate based on no increase in anticipated number of visitors because of increase in population, 1940 - 1961</u> 1933 and 1940 penetration factors applied to 1940 Washington population and tourism	6.1
III. <u>Attendance estimate based on assumption that Century 21 will achieve same per cent of its population-growth-oriented projection of 10 million as the New York fair achieved of its similarly projected attendance</u>	6.5
IV. <u>Attendance estimate based on assumption that Century 21 will achieve same per cent of its population-growth-oriented projection of 10 million as the San Francisco fair achieved of its similarly projected attendance</u>	6.9
V. <u>Estimate adapted for planning purposes</u> Average of Items II, III, and IV above plus 1 million to reflect substantial improvement in economic conditions between 1940 and 1960, and the limited competition Century 21 will face in its comparatively remote location	7.5

II - 7

ECONOMICS RESEARCH ASSOCIATES

Figure 2.8. Century 21 hired ERA to develop new attendance estimates. Bob Lorimer and Harrison Price of ERA arrived at a new 7.5 million estimated attendees to be used “for planning purposes.” Compare with SRI’s projections in Figure 2.7. Source: *Planning Manual for Century 21 Exposition, Seattle, Washington*, Economics Research Associates, December 1, 1960, Box 2, Accession 420-003, Ewen C. Dingwall papers, University of Washington Special Collections.

Lorimer’s performance worked, and confidence in their work once again began to replace the dissent and uncertainty that had earlier paralyzed the fair’s planners. Not only was the question of the attendance projections apparently settled, but the two very different sets of

³⁵ Robert L. Lorimer to Buzz, September 27, 1960, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD.

projections from ERA and SRI were justified by asserting that the SRI projections represented the theoretical draw of the future fair, if one ignored any real physical constraints put on attendance either by the fairgrounds or the city's ability to host that many visitors. In time, SRI would no longer be mentioned in the fair's official PR campaigns, its name silently dropped.³⁶

Lorimer was so successful in his work that his boss, Buzz, was able to successfully pitch a much larger proposal to Century 21's management, which would significantly expand the scope of services ERA would provide to Century 21. Working closely with executives on a daily basis, ERA would solve "first problems [facing the fair's staff] first,"³⁷ collaborating with architects, designers, and management "essentially an extension of the exposition staff." By September, Price had a signed contract for \$8,000 worth of services (the contract also included a clause that would protect ERA from Buzz's mistake in disclosing to Century 21 work ERA had done for Disney related to a "Disneyland East").³⁸

In other words, Buzz's ERA would mediate among all major pieces of the Century 21 organization involved in planning the fair. While not operations research in a strict sense, there is a striking similarity between Buzz's proposal to resolve "first problems...first" and the operational research groups of World War II. Over the course of the 1950s, with operations research advocates forging a professional identity and purpose for themselves, there developed two ideas about operations research. The historian Will Thomas has shown how consultants at Arthur D. Little, Inc., used operations research as a way to competitively market themselves against older, established management consulting firms.³⁹ The case was similar at SRI, where Price had worked for a few years in the early 1950s. There, Bill Platt (who brought Price to SRI in 1953), had throughout the 1950s written pieces published in professional journals and given speeches about the advantages operations research could bring to practitioners, who had been limited in their work to problems impacting the shop floor. The value of operations research, Platt said before a meeting of the Industrial Engineering Society of Hawaii, would be in gaining

³⁶ Jay Rockey, Memo, May 29, 1961, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. Don Fry to Harry Henke, December 5, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

³⁷ Harrison A. Price to Robert D. Ashley, August 9, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

³⁸ Harrison A. Price, "A Proposal for Consulting Service," August 9, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21. Harrison A. Price to George Whitney, Jr., September 16, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21. Harrison A. Price to George Whitney, Jr., September 22, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

³⁹ Scholarship on OR has tended to focus on determining what body of methods constituted operations research (e.g., Fortun and Schweber, "Scientists and the Legacy of World War II: The Case of Operations Research (or)."), its impact upon other fields (Marion Fourcade and Rakesh Khurana, "From Social Control to Financial Economics: The Linked Ecologies of Economics and Business in Twentieth Century America (Working Paper)," (Cambridge, MA: Harvard Business School, 2011), Philip Mirowski, *Machine Dreams : Economics Becomes a Cyborg Science* (Cambridge ; New York: Cambridge University Press, 2002), or how and why the patronage structures established during World War II spread after 1945 (Rau, "Technological Systems, Expertise, and Policy Making: The British Origins of Operational Research.", ———, "Combat Science: The Emergence of Operational Research in World War II."). There has also been much work on the OR hotbed, RAND Corp (Jardini, "Out of the Blue Yonder: The Rand Corporation's Diversification into Social Welfare Research, 1946-1968", Hounshell, "The Cold War, Rand, and the Generation of Knowledge, 1946-1962.", Light, "Taking Games Seriously."). My research and others (e.g., Thomas, "Operations Research Vis-À-Vis Management at Arthur D. Little and the Massachusetts Institute of Technology in the 1950s.") suggests that within the American private sector, OR was used by newer consulting firms as a way to differentiate themselves in the competitive market of professional services – regardless whether these firms actually deployed what we would call OR in their work for clients. See also the oft-cited article by Herbert Solow in *Fortune*, which describes for that journal's audience the difference between the new "O.R. man" and earlier management consultants, and the reasons why one might hire an OR man over a management consultant; Solow, "Operations Research."

access to the “larger ... opportunities that exist for helping management in decision-making.”⁴⁰ While on the surface, Platt argued that so doing would bring greater relevance to the industrial engineering profession by moving them off the shop floor and into the board rooms, the promise of more work - and revenue - was a subtext of his speech.

Century 21 executives and ERA both hoped this new project, which by late 1960 had become formalized as a “Planning Manual,” would bring tangible benefits in planning through the application of what they understood to be objective, rational planning (Figure 2.9). Yet the greatest value of keeping ERA on board was in having a ready asset able to keep the planning, and later, operations of the fair moving forward through moments when confidence in the ultimate success of the fair seemed once again uncertain. George Whitney, a Disneyland alumnus and head of Century 21’s exhibits and concessions division, felt that ERA’s work, which included a “[t]able showing optimum number of snack bars, cafeterias, and restaurants” and “[c]omputation showing potential payout to a major concessionaire” would be invaluable in helping him judge with confidence whether or not a given concessionaire is qualified or not.⁴¹ Harry Henke, the fair’s Assistant VP of Administration, noted keeping ERA on board “will be a very definite asset to Century 21....”⁴² Nick Jorgenson, head of Century 21’s food program, also used ERA’s figures to develop a “detailed projection of the entire food and beverage program.”⁴³ Exhibitors too found value in using the planning manual’s projections of visitor flow and attendance patterns to have confidence in the performance of their own drawing board designs.⁴⁴ And in December 1960, with concern rising among fair staff about the need to justify for potential exhibitors that participating in both the Seattle fair and the 1964-1965 New York World’s Fair would be a sound choice, Price proposed expanding the planning manual’s section on “Visitor Characteristics” to include estimates and graphical depictions of “the geographical origin of visitors to Century 21” illustrating how the two fairs would complement, rather than compete against, one another.⁴⁵

⁴⁰ W. J. Platt, Operations Research – Management Revisited,” transcript of speech Given Before Industrial Engineering Society of Hawaii, May 26, 1955, Platt, William James - Increment, April 1988, Box 1, WJP. Platt, "Industrial Economics and Operations Research at Stanford Research Institute."

⁴¹ George K. Whitney to E. C. Dingwall, November 1, 1960, ECD Personal - C-21, Concessions, Miscellaneous, Box 1, Accession 001, ECD. K. Whitney to E. C. Dingwall, November 18, 1960, ECD Personal - C-21, Concessions & Amusements, Staff Report, Box 1, Accession 001, ECD.

⁴² Harry Henke III to Mr. Harrison A. Price, September 23, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

⁴³ Harrison A. Price to Mr. George Whitney, Jr., October 28, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21. George K. Whitney to Harry Henke, November 18, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21. Robert L. Lorimer to George Whitney, Jr., December 13, 1960, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21. “Status Report 10,” November 19, 1960, Status Report - Personal, Box 14, Accession 001, ECD. “Status Report 13,” December 10, 1960, Status Report - Personal, Box 14, Accession 001, ECD. Nick Jorgensen, "Division of Food Services," [1963], 3-4, Subject Series - Food Services Div., 1960-62, Box 15, JEG.

⁴⁴ Ed Stimpson to Joseph H. Gandy, February 4, 1961, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

⁴⁵ Harrison A. Price to George Whitney, Jr., December 14, 1960, 1-2, Economic Research Associates, Box 48, Series I Records of Harry Henke III, Assistant Vice-President for Administration, 1959-1963, Subgroup III Executive Division, C21.

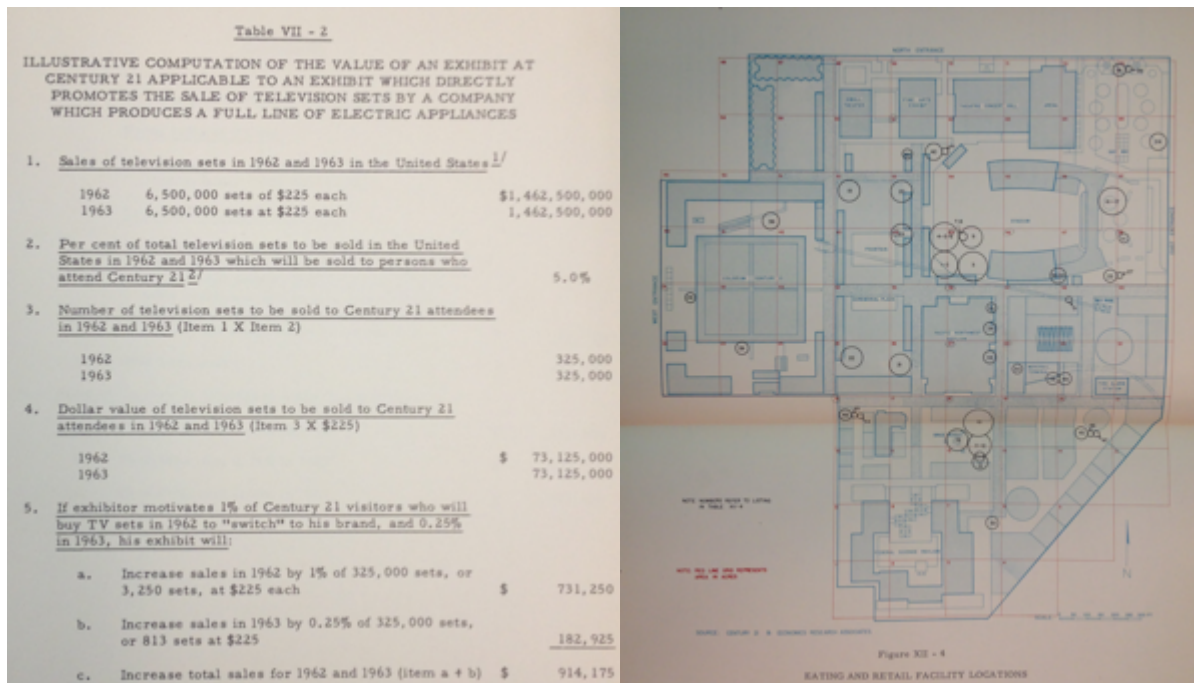


Figure 2.9. Examples from ERA’s “Planning Manual” for the Century 21 Exposition. Detail (left) from analysis illustrating the “value of an exhibit which directly promotes the sale of television sets;” suggested locations for “food and retail” concessions on the fairgrounds (right). Such information was used by Century 21 staff in negotiations with prospective exhibitors and concessionaires, as well as planning the fair’s physical layout. Source: *Planning Manual for Century 21 Exposition, Seattle, Washington*, Economics Research Associates, December 1, 1960, Box 2, Accession 420-003, Ewen C. Dingwall papers, University of Washington Special Collections.

ERA’s presence helped move the fair’s management through two more periods where confidence in the fair’s success was low among fair staff, but the potential impact upon the visitor’s experience would be great were the wrong decision made. Barely more than a week before Century 21 opened to the public in 1962, concern and internal dispute among the staff once again arose regarding the probable attendance. A highly successful advance ticket sales program suggested that too many people may try to visit the fair, leading to overcrowding not only on the fairgrounds itself but also stressing Seattle’s limited ability to host those visitors. Visitor counts as high as 15 million seemed possible. Some at Century 21 advocated dissuading these visitors through press releases, an act which could have the potential of reducing attendance below the requisite break even amount. Whitney asked ERA to revisit the attendance projections in light of the advance ticket sales program, which Price conveyed to Whitney via telephone on April 9th. Ignoring the fairgrounds physical restrictions, Price and the ERA team felt that a maximum attendance of 10 to 12 million was possible. Yet physically the park could only handle an average peak capacity of 46,000, with an occasional 55,000 capacity possible but only “on a few single days....” Any figures higher than 12 million were “unrealistic...requir[ing]

a daily attendance” during the summer approaching “94,000,” a value far exceeding what the fairgrounds could physically support in the opinion of the ERA staff.⁴⁶

At a meeting on April 13th, fair executives discussed ERA’s findings. The 9.25 million still seemed troublesome, and some executives felt that perhaps releasing an announcement in the press in an attempt to dissuade some visitors from arriving would still be in order. Using ERA’s figures, Whitney argued against this. “Despite what advance ticket sales show” he said in a memo to Century 21’s president Joe Gandy, attendance higher than 7.5 million would depend on “how good the show turns out to be; that is, how highly recommended it will be by those who have seen it.” Whitney noted that any official numbers on attendance circulated in the press can be adjusted later. Furthermore, dissuasion of potential visitors via “press reports that the grounds are inadequate” was nothing but “bad public relations. Let’s wait before we have to shut the gates before we talk about it.”⁴⁷ With ERA as backup, Whitney succeeded in persuading Gandy and others to move ahead into the fair’s opening with confidence, despite the advance ticket sales program suggesting otherwise to some.

The second and final instance where ERA helped maintain confidence in the fair’s ultimate success among its staff and management was during a budget crisis that began in late May 1962. The fair’s Budget and Finance Committee, after noting some discrepancies in a few individual departmental budgets, had asked all departments to submit revised budgets. After studying these new budgets, it now appeared to the fair’s comptroller that instead of closing with a surplus of \$565,000, the Fair would be in the red by almost three times that amount.⁴⁸ In response, Harry Henke, head of the fair’s Administrative Division, asked all divisions to implement a 20% reduction in their budgets on the advice of his comptroller. The potential impact of these cuts seemed dire to some, including Fred Schumacher, head of Century 21’s operations division. In a lengthy memo to the fair’s general manager Ewen Dingwall and president Joseph Gandy, Schumacher warned that such reductions would “adversely effect [sic] the Fair’s operation and seriously deteriorate the purpose, aims and goals of presenting the Seattle World’s Fair.” Realizing that his voice alone was insufficient to gain the confidence of Century 21’s top decision makers, and like Whitney before him, Schumacher called upon ERA to reevaluate their attendance projections.⁴⁹ ERA concluded, based on the exposition’s performance thus far, that the Fair would exceed the 9.25 million estimated attendance, with an “estimate of 10.7 million ... to be realistic under the circumstances.”⁵⁰ Buzz’s reasoning was based on simple ratios, and assumed that the average excess per day of actual versus estimated attendance over the 65 days since opening would continue. Yet such was the confidence in the abilities of Price and Lorimer to perform as prognosticators that this re-glossing of attendance

⁴⁶ George K. Whitney to Joseph Gandy, April 12, 1962, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD. "Estimated Attendance at the Seattle World's Fair, April 21 - October 21, 1962, based on pre-opening performance through April 1, 1962," Prepared for Century 21 Exposition, Inc., Economics Research Associates, April 9, 1962, Projects and Planning - attendance, 1962, Box 5, JEG.

⁴⁷ [George K. Whitney] to Joe Gandy, April 13, 1962, ECD Personal - C-21, Project Development, Attendance & SRI, Box 6, Accession 001, ECD.

⁴⁸ "Program for Revised Budget and Management Responsibilities," [May 1962], ECD Personal - C-21, Controller, Budget - Operating Period, Box 2, Accession 001, ECD. G. E. Gorans to Joseph E. Gandy, June 14, 1962, ECD Personal - C-21, Controller, Budget & Finance Committee, Box 2, Accession 001, ECD.

⁴⁹ Both Schumacher and Whitney were veterans of Disneyland’s early management, and it was at that park where they were first introduced to Buzz Price. Schumacher himself was an industrial engineer at Convair during World War II. Their practice of calling upon Price at Century 21 reflected a pattern prevalent at the Disney organization to use outside experts to move decisions forward when needed, despite having others within the Disney organization possessing the technical expertise needed to perform the same analysis.

⁵⁰ F. V. Schumacher to E. C. Dingwall and J. Gandy, June 23, 1962, ECD Personal, Controllers - Budget & Finance, Box 2, Accession 001, ECD. Harrison A. Price to Frederick V. Schumacher, July 2, 1962, ECD Personal, Controllers - Budget & Finance, Box 2, Accession 001, ECD.

projections using straightforward arithmetic was sufficient for Gandy and Dingwall to confidently reverse the budget cuts implemented by Henke, although they were careful to note that ongoing weekly evaluations of Century 21's fiscal position would continue.⁵¹

The Century 21 Exposition, the first of America's Cold War world's fairs, aimed to present before visitors, the nation, and the world an image of confidence in American science and technology, and the future world that, through democratic capitalism's mass affluence, science and technology would create. Opening in April 1962, it came at a critical moment in the nation's history. Sputnik had shaken the confidence of many Americans about the path their political, business, and scientific leadership had taken. In many ways, Century 21 did succeed in reaffirming the public's confidence in their leaders. Yet, as the story of the fair's planning and operations presented here illustrates, the fair's promoters and planners themselves needed someone to help them believe in the ultimate success of their own work. When dissent and uncertainty among the fair's staff and management threatened to make Century 21 a nonstarter, they called upon economics consultants at Stanford Research Institute and Economics Research Associates. Yet far from the image of objective, rational planners, the true value of these consultants lay in their ability not only as mathematical virtuosos but also to maintain confidence among the fair's management in the face of uncertainty. They were confidence men, but as C. V. Wood once remarked, they delivered the goods.

⁵¹ Joseph E. Gandy and Ewen C. Dingwall to Officers of Century 21 Exposition, Inc., June 28, 1962, ECD Personal - C-21, Controller, Budget - Operating Period, Box 2, Accession 001, ECD. Joseph E. Gandy and Ewen C. Dingwall to Officers of Century 21 Exposition, Inc., July 12, 1962, ECD Personal, Controllers - Budget & Finance, Box 2, Accession 001, ECD.

Chapter Three

Consultants at the 1964-1965 New York World's Fair, 1959-1965

If there is anything his critics and supporters agree on, it is that Robert Moses was one of the greatest builders of the twentieth century United States. Moses had an uncanny ability both as an engineer and manager to complete hundreds of projects across the New York metropolitan area during his tenure first as the state's Parks Commissioner and later the City of New York. When taken collectively, his projects reflect a particular vision for New York and its future, one where parkways, parks, and recreational facilities played an essential role in one of the nation's largest cities. This vision was supported widely among New York's political, business, and financial circles.¹ But it also existed before Moses became commissioner. Urban historian Kenneth T. Jackson notes that many of Moses's projects were, in fact, not "original to Moses; all were derivative of plans conceived and published by others long before he laid claim to them."² As the state (and later city's) parks commissioner, as the late urban historian Joel Schwartz suggests, city planning in New York "was Moses's turf from the start." Thus, Moses's contribution was as a builder, taking cues from his predecessors. In 1934, when Fiorello H. La Guardia created an advisory committee to establish a coherent planning policy, - the same year that La Guardia appointed Moses the city's parks commissioner. Thus, "[i]n the minds of La Guardia and civic leaders, New York was potentially a galaxy of recreation areas; and this goal, so vital to civic leaders, gave the parks commissioner a mandate to create a far-reaching strategy for parks, parkland, and parkways."³ By the mid 1950s, as the city and state's Parks Commissioner, Moses's oeuvre stretched across the New York metropolitan region. It included parkways and bridges, public housing, and recreational facilities.

Not everyone agreed with the Moses vision, however. The Cross-Bronx Expressway is but one example whose construction and planning generated much outcry among those who lived in the areas where the Expressway was to be built.⁴ A planned arterial project that would have sliced Washington Square Park in half was successfully challenged by local residents in the 1950s.⁵ Some scholars have claimed that aspects of this vision was also implicitly racist and classist, citing in particular the overpasses of the Long Island Expressway which were too low to permit the passage of public busses.⁶ But despite this resistance, Moses pushed many projects forward, and as such his value as a builder for his establishment sponsors increased. Moses could do this in part because he crafted for himself a particular public persona, one where he represented "progress, efficiency, rationality, and a disinterested zeal for the public good." Those opposed, his critics, he would describe as "partisans, enthusiasts, crackpots, fanatics, or other horned cattle."⁷

¹ Joel Schwartz, "Robert Moses and City Planning," in *Robert Moses and the Modern City: The Transformation of New York*, ed. Hilary Ballon and Kenneth T. Jackson (New York: W. W. Norton & Co., 2007), 131.

² Kenneth T. Jackson, "Robert Moses and the Rise of New York: The Power Broker in Perspective," in *Robert Moses and the Modern City: The Transformation of New York*, ed. Hilary Ballon and Kenneth T. Jackson (New York: W. W. Norton & Co., 2007), 70.

³ Schwartz, "Robert Moses and City Planning," 131.

⁴ Robert Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Vintage Books, 1974).

⁵ Robert Fishman, "Revolt of the Urbs: Robert Moses and His Critics," in *Robert Moses and the Modern City: The Transformation of New York*, ed. Hilary Ballon and Kenneth T. Jackson (New York: W. W. Norton & Co., 2007).

⁶ Langdon Winner, "Do Artifacts Have Politics?," in *The Whale and the Reactor: A Search for Limits in an Age of High Technology*, ed. Langdon Winner (Chicago: University of Chicago Press, 1986).

⁷ Moses quoted in Fishman, "Revolt of the Urbs: Robert Moses and His Critics," 122.

To overcome resistance to his vision for New York, Moses deliberately presented himself before the public as one engaged in “ritual combat” on behalf of progress and reason.⁸ It was a self-fashioned persona that Fishman called “the drama of Big Bob the Builder....” As long as Moses’s supporters believed in that persona, he could strongarm and marginalize the voices of critics.⁹ Moses’s performance incorporated a constellation of individuals and firms, including the engineering firms of Andrews & Clark and Madigan-Hyland, and the landscape architects Clarke & Rapuano. Moses frequently presented these firms as separate and independent from him,¹⁰ giving an air of objectivity. Yet in practice, the separation between those firms and the parks commissioner was superficial, a carefully staged performance.¹¹ Over the course of his career, Moses would remove actors no longer useful, replacing them with ones who could meet new ideas of “progress, efficiency, and rationality.”¹²

This chapter considers the experience of planning the New York Fair to illuminate how particular contexts influence the need for outside advisors and the impact of that upon method selection. It also shows what can happen when members of a team hold colliding views about what will happen in the future. Trust also played a role in deciding what outsiders to use in prognosticating that future. As one of the biggest construction projects of the post-war era (Figure 3.1), the New York Fair was also the object of consultants seeking new clients. Some of these, such as a crowd control and queue management system from Arthur D. Little, Inc., were rejected due to cost and trust reasons. Others, such as a FORTRAN queue theory analysis done by IBM’s Service Bureau Corporation of the Fair’s entry gates, were readily accepted by the Fair Corporation. Taken together, these provide greater insight into how the particular configuration and needs of a team of actors - in this case, the Fair Corporation - contributed to the pull or uptake factors that helped fuel the professional services boom of the 1950s and 1960s; why methods such as operations research divided into a body of practice and body of theory,¹³ and the impact of new methods upon the ultimate shape of mass affluence.

⁸ Ibid.

⁹ Ibid., 123..

¹⁰ For example, Moses described Madigan-Hyland and two other firms which were largely under his orbit as separate consultants that assisted him in Robert Moses, “Directors Report,” Portland Improvement, Portland improvement. Robert Moses, director; consulting engineers: Madigan-Hyland, W. Earle Andrews, Gilmore D. Clarke, Waddell & Hardesty; attorneys: Hawkins, Delafield & Longfellow, Raymond P. McNulty, November 10, 1943, New York: 1943, 10. Moses similarly described Madigan-Hyland’s work in a study intended to justify the Long Island Sound Crossing as one of gathering “facts;” see Madigan-Hyland, Traffic, Earnings and Feasibility of the Long Island Sound Crossing, [New York: 1965].

¹¹ Owen D. Gutfreund, “Rebuilding New York in the Auto Age: Robert Moses and His Highways,” in *Robert Moses and the Modern City: The Transformation of New York*, ed. Hilary Ballon and Kenneth T. Jackson (New York: W. W. Norton & Co., 2007), 90-91.

¹² As the sources of capital for highway projects shifted towards the federal Bureau of Public Roads, for example, the landscape architects originally employed by Moses to build his “parkways” would be replaced with engineers whose designs were much “more utilitarian” than those of their predecessors; see *ibid.*

¹³ William Thomas, “Operations Research Vis-à-Vis Management at Arthur D. Little and the Massachusetts Institute of Technology in the 1950s,” *Business History Review* 86 (2012).

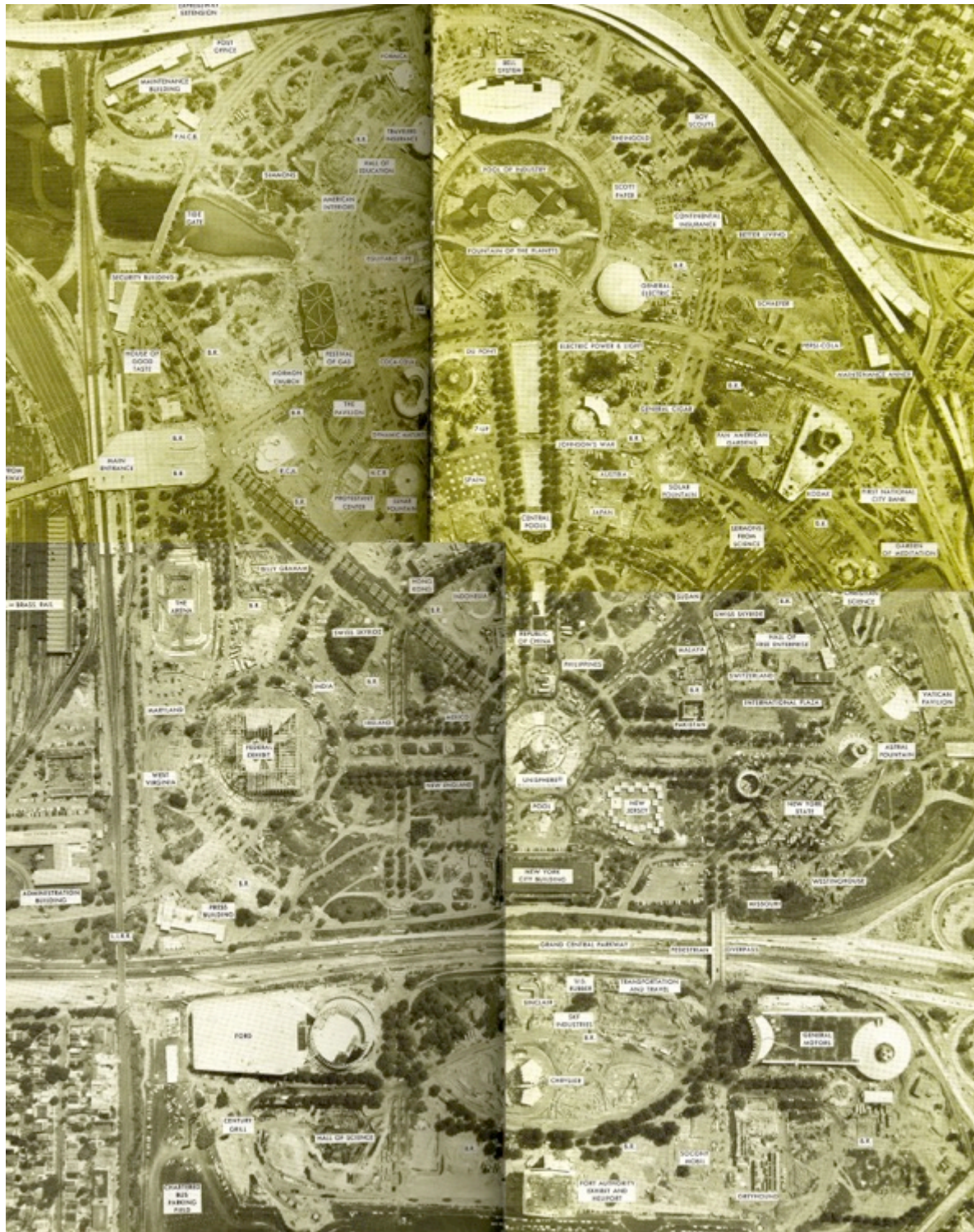


Figure 3.1. This mosaic, assembled by the author from aerial photographs taken of the 1964-1965 New York World’s Fair during construction, illustrates the scale that domestic U.S fairs would reach by the mid-1960s. Many new consultants and firms, including Arthur D. Little, Inc., and IBM’s Service Bureau Corporation, sought to use the fair as a

showcase for their services. Source: Author, assembled from images in *Progress Report 8, New York World's Fair 1964-1965 Corporation, New York, NY, 1963.*

Estimating Attendance for the 1964-1965 New York World's Fair

As the second international exposition held in the United States after 1945 (Seattle's Century 21 was the first), the New York fair easily dwarfed its west coast sibling. Like Century 21 in Seattle, the 1964-1965 New York World's Fair celebrated the promise of American capitalism. Yet the fair in Flushing Meadows would bear the mark of corporatism to an even greater degree than its counterpart in Seattle, caused in part from the failure to have the USSR as participate, and the failure to have sanctioning by the Bureau of International Expositions.¹⁴ The Civil Rights and Vietnam War protests outside of the fairgrounds (some even directly across from its borders) also lent a feeling of increased corporatism.¹⁵ More strongly than in Seattle, then, the New York fair celebrated a particular vision of American capitalism that highlighted the ability of American corporations to provide social goods to the many.

After securing federal sanctioning in late October 1959, directors of the New York 1964-1965 World's Fair moved forward to secure financing from private lenders. Although the previous fair in 1939 and 1940 had been a financial failure, backers for the present fair felt that theirs would not suffer from the war, bad financing, and poor leadership. The war, they reasoned, led to fewer attendees than expected. Now, with no war looming on the horizon (the escalating Cold War apparently did not figure as a challenge), and a larger population with greater mobility, the New York elite supporting the fair felt there was little doubt their event would attract 70 million people. The financial and leadership challenges would be resolved easily enough, by selecting a strong leader to manage the construction and operations of the fair. That person was Robert Moses.¹⁶ Upon Moses's appointment as President of the New York 1964-1965 World's Fair Corporation in early 1960, replacing the previous president, Robert Kopple, the ways in which confidence in the fair's program would be built among investors and others would carry the indelible mark of Robert Moses and the organizations and institutions that surrounded him.

One firm that held various roles within the Moses constellation was that of Madigan-Hyland. Early in his career, while serving under New York governor Al Smith as the state's parks commissioner and working on the Jones Beach development, Moses became acquainted with Jack Madigan. Moses quickly realized that the young Irishman had a knack with assembling the numbers needed to build confidence among investors uncertain of the feasibility of Moses's massive public works projects. After Jones Beach, Moses assisted Jack, who had no formal college education, set up the firm Madigan-Hyland, based in Queens. By the late 1930s, the firm had developed financial estimates for many of Moses' projects, including the Henry Hudson Bridge and West Side Extension. The firm's principals, including Jack Madigan, would on occasion head to Albany, the state capital of New York, to lobby on behalf of one of Moses's projects¹⁷.¹⁸ Yet Jack's firm did not strictly focus on rhetorical reports. As an engineering firm, Madigan-Hyland also worked on other Moses projects, including expressways after World War

¹⁴ Lawrence R. Samuel, *The End of the Innocence : The 1964-1965 New York World's Fair*, 1st ed. (Syracuse, N.Y.: Syracuse University Press, 2007), xvi, xix-xx, xxii.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Caro, *The Power Broker: Robert Moses and the Fall of New York*, 561-562.

¹⁸ Ibid.

II.¹⁹ Yet the firm's successes and reputation were intimately linked to Moses's own fortunes. Officials in San Francisco, for example, turned to Madigan-Hyland to provide revenue and expense estimates for the Golden Gate Bridge. In 1948, the firm produced a lengthy feasibility study for the City of Los Angeles on a proposed (but never realized) redevelopment of that city's beach front.²⁰ With its own fortunes then tied to those of Moses, and despite the firm's purported status as an independent entity, its status as a firm separate from Moses was at times a carefully staged performance.

While Madigan-Hyland's engineering staff did work on physical design problems for the fair, such as the entry gates,²¹ as "revenue engineers" the firm's primary work was to develop revenue and attendance estimates for the fair. These numbers were included in the "Official Statement" for the fair's 6% promissory notes.²² Similar to ERA's "Planning Manual" for Century 21, Madigan-Hyland's report was also used to establish basic parameters early on for planning some aspects of the fair, such as the Transportation Section.²³ But there was an important difference between ERA and Madigan-Hyland's work: at Century 21, there was a greater amount of uncertainty among members of the World Fair Commission and Century 21 Exposition, Inc. regarding how many visitors the fair would draw. In contrast, there was little doubt that the fair would not attract 70 million visitors during its two seasons.²⁴

Were it not at the insistence of the Fair's first Finance Committee chairman, John Hanes,²⁵ it is entirely possible no official pronouncement justifying the estimated attendance in the "Official Statement" would have even been completed. Hanes' reasons appear to have been so that he would have more than just "preliminary" numbers upon which to go to the banking establishment to secure initial short-term loans that would fund the Fair Corporation's first operating period. Even after receiving Madigan-Hyland's report, Hanes padded the numbers by twenty five percent, "just for contingencies."²⁶ For Hanes, a former undersecretary of the treasury under FDR, the two biggest challenges (outside of the war) that hampered the previous fair in 1939 and 1940 were bad financing and bad management. As Hanes stated before a Board of Directors meeting in May 1960, financing for the fair had been understood to be one of the previous fair's major problems, and he did not want to have to go back to the bankers "for a

¹⁹ Gutfreund, "Rebuilding New York in the Auto Age: Robert Moses and His Highways," 90-91.

²⁰ Caro, *The Power Broker: Robert Moses and the Fall of New York*, 561-562. Madigan-Hyland, "Recreational Development of the Los Angeles Area Shoreline," January 18, 1949, Madigan-Hyland, New York, NY.

²¹ M. R. Pender to General Potter, March 20, 1961, C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Box 169, Series I. General Files, New York World's Fair 1964-1965 Corporation Records, Archives & Manuscripts Division, New York Public Library (hereafter "NYFC")

²² C. J. Lynch, "Estimate of Overseas Visitors, New York World's Fair, 1964 - 1965," Transportation Section - World's Fair, The Port of New York Authority, [1961], A4.8, Estimated Attendance - Foreign Visitors, Attendance, Administration, Box 88, Series I. General Files, NYFC. "Revenue and Expense Estimates for 1964-65 World's Fair," Madigan-Hyland, New York, August 1, 1960, A5., Madigan-Hyland Report - 8/1/60, Revenue, Administration, Box 89, Series I. General Files, NYFC. On the admissions pricing change, see Erwin Witt to Commissioner Moses, Memorandum, July, 29 1960, A5., Madigan-Hyland, Revenue, Administration, Box 89, Series I. General Files, NYFC.

²³ C. J. Lynch, "Estimate of Overseas Visitors, New York World's Fair, 1964 - 1965," Transportation Section - World's Fair, The Port of New York Authority, [1961], A4.8, Estimated Attendance - Foreign Visitors, Attendance, Administration, Box 88, Series I. General Files, NYFC.

²⁴ In private, there were concerns among Moses's staff that actual attendance could reach as high as 82 million visitors. See W. E. Potter to Mr. Moses, August 10, 1960, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC. Ann Novokny, "Attendance at the New York World's Fair 1964-1965," April 29, 1962, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC. Stuart Constable to Commissioner Moses, October 24, 1962, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC.

²⁵ Hanes served as the Treasury under-secretary during FDR's presidency.

²⁶ Minutes of Board of Directors, May 24, 1960, 24-25 Board of Directors Meeting Minutes, April 1960 to December 1960, Box 548, Series V. Secretary's File, NYFC.

second bite.”²⁷ This, combined with a firm belief among many on the Fair’s Board of Directors in Moses’s ability to build and manage their fair and no regulatory requirements to do otherwise, meant that Madigan-Hyland would do no more than write what amounted to a brief treatment on the Fair’s estimated attendance and revenues.

In the spring of 1960, George Spargo (who had replaced John Hanes as chairman of the fair’s Finance Committee after his resignation) assembled a team that including consultants from Madigan-Hyland to work on the Fair’s prospectus, or what Spargo called a “red herring.” For Spargo and Moses, calling the prospectus a “red herring” reveals how both understood the work as something that distracted them from the real task of building the fair.²⁸ Their report, *Revenue and Expense Estimates for 1964-65 World's Fair*, was eventually copied almost verbatim in the “Official Statement” for the 6% promissory notes.²⁹

The work that Madigan-Hyland did was first and foremost to come up with calculations that would place the 70 million estimated attendance upon mathematical foundations. This work was uncomplicated technically, being no more complex than basic arithmetic, and relied heavily upon Madigan-Hyland’s professional standing; not to mention the confidence that most everyone involved in the present venture had in attracting 70 million.³⁰ In estimating attendance for 1964, Madigan-Hyland engineers largely and unproblematically based their attendance estimates upon the actual attendance of the earlier fair (Figure 3.2). Ignoring changing demographics, they took a mode of 40 percent (the halfway point between the actual national increase of 38 percent and the New York metropolitan area increase of 42 percent), multiplying the previous fair’s attendance by that factor. A “resistance factor” of 0.9 was then used to estimate the impact upon attendance of a \$2 admissions fee on the Fair’s revenues; little explanation was given as to why the engineers selected 0.9. Increased mobility, the “lack of a competitive Fair on the West Coast” (the engineers apparently assumed a significant number of people in 1939 and 1940 faced the choice of attending either the San Francisco or New York fair), and a newly affluent, jet connected Europe would all tack on an additional 7.5 million visitors. The final estimate for 1964, after a rounding up 100,000, was 40 million. Attendance for 1965 was even more straightforward (Figure 3.2). Engineers applied the same ratio from the 1940 season to the 1965 season. However, “[n]oting that 1940 was under the handicap of gathering war clouds, which must have kept at the very least 5 per cent of” potential visitors “at home.” Therefore a conservative estimate for 1965 attendance was 30,000,000.³¹ But the biggest - and unstated - assumption was that a fair held in Flushing Meadows, 1964-1965 would have the same drawing power that the 1939-1940 fair may have had, but never had a chance to demonstrate in reality.

²⁷ Minutes of Board of Directors Meeting, May 24, 1960, 24-25, Board of Directors Meeting Minutes, April 1960 to December 1960, Box 548, Series V. Secretary’s File, NYFC.

²⁸ George E. Spargo to Commissioner Moses, Memorandum, April 20, 1960, A5.0, Prospectus, Debentures, Administration, Box 90, Series I. General Files, NYFC.

²⁹ In a supplemental memorandum, Madigan-Hyland provided suggestions on how to incorporate their estimates into financial documents; see “Suggestion for Presentation of Financial Requirements, Estimated Receipts, Disbursements and Financing Requirements for 1964-1965 Fair,” Madigan-Hyland, [1960], A5., Madigan-Hyland Report - 8/1/60, Revenue, Administration, Box 89, Series I. General Files, NYFC.

³⁰ On disciplinary objectivity, see Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. An analyst at the The Port Authority of New York (who managed the Fair’s Transportation Section) described Madigan-Hyland as “one of the nation’s leading independent consulting firms;” see C. J. Lynch, “Estimate of Overseas Visitors, New York World’s Fair, 1964 - 1965,” Transportation Section - World’s Fair, The Port of New York Authority, [1961], A4.8, Estimated Attendance - Foreign Visitors, Attendance, Administration, Box 88, Series I. General Files, NYFC.

³¹ New York World’s Fair 1964-1965 Corporation, “Official Statement Relating to \$67,500,000 6% Promissory Notes Due February 1, 1966” Price 100%” December 15, 1960, 15-16, Agenda, Directors Meeting December 19, 1960, Box 549, Series V. Secretary’s File, NYFC.

1939-40 WORLD'S FAIR EXPENSES (EXCLUSIVE OF CONSTRUCTION)				
Items	Pre-Fair	1939	1940 and After	Total
Payroll	\$ 6,810,795	\$ 5,778,420	\$ 4,873,544	\$17,462,759
Direct Expense of Fair-owned Projects	—	698,244	1,124,518	1,822,762
Contractual Services	52,903	643,847	1,009,946	1,706,696
Interest and Discount Expense	1,298,859	566,103	1,143,925	3,008,887
Insurance	295,198	462,320	239,165	1,007,683
Utility Services to Others	—	443,038	368,605	811,643
Promotion & Entertainment	744,429	387,331	323,042	1,454,802
Professional Fees	1,470,500	442,676	727,310	2,640,486
Other Expenses (1)	2,637,046	1,290,152	1,366,614	5,293,812
TOTAL	\$13,309,730	\$10,712,131	\$11,187,669	\$35,209,530

(1) Other Expenses	
Stationery and Printing	\$ 985,393
Office Furniture and Equipment	424,513
Equipment Rental	420,739
Telephone and Telegraph	409,652
Light, Heat and Fuel	471,417
Heat	213,399
Expense Charged to Others	257,269
Postage	172,048
Banquets, Drawings, etc.	343,568
Uniforms	223,880
Leasehold Improvements	185,964
Operating Maintenance Expense	405,910
Laundry	177,322
Miscellaneous	662,635
Total	\$5,293,812

While the excess of 1939-40 revenues over operating expenses as shown above amounted to \$13,454,459, there was a final deficit of \$18,636,380.26 in the payment of the principal amount of \$26,862,800 4% Debentures due January 1, 1941 issued by the New York World's Fair 1939 Incorporated.

B. Attendance

1. Attendance in First Year (1964)

Paid attendance in 1939 was approximately 26,000,000 persons. The principal factor favoring increased attendance in 1964 is the large population increase which has taken place since 1939. On a national basis, the increase is estimated to be about 38 per cent in 1964; and for the New York metropolitan area 42 per cent.

An increase factor of 40 per cent therefore can be applied to the 1939 attendance of 26,000,000, to compensate for the increased population. Another factor which has a bearing on the visitor volume is the higher admission rate. To compensate for this, a correction factor of 0.9 is applied. The basic 1964 attendance therefore is arrived at as follows:

26,000,000 × 1.4 × 0.9 or	32,400,000
An additional factor to be considered is lack of a competitive Fair on the West Coast (unlike 1939), easier means of long distance travel, and a different psychological attitude towards spending. As a result of these considerations, we believe it conservative to assume an additional 2,000,000 visitors, at 3 admissions per person, thereby increasing Fair attendance by	6,000,000
Western Europe has reached a degree of mass prosperity that was entirely unknown in 1939, and jet travel has made it possible to cross the Atlantic in a matter of hours. It seems conservative to assume a half million visitors from abroad, which at 3 visits per person would increase attendance by	1,500,000
Estimated total 1964 attendance therefore is	39,900,000
Say	40,000,000

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2. Attendance in Second Year (1965)

1940 attendance was 72 per cent of 1939 attendance, and was partly stimulated by greatly reduced admission fees.

Said 72 per cent, applied to 1964 attendance, would result in a 1965 attendance of 28,800,000.

1940 was under the handicap of gathering was clouds, which must have kept at the very least 5 to 10 per cent of the potential attendance at home. Therefore, a conservative estimate of 1965 attendance would be 30,000,000.

3. Revenues from Attendance (General Admission)

The basic admission fee of \$2.00 proposed by the Fair Corporation is four times the 1939-40 fee which, after a brief initial period at 75¢, was reduced to and kept at 50¢. The psychological difference of "easier spending", would tend to make the \$2.00 admission fee acceptable without too much resistance; nevertheless a resistance factor of 0.9 has been applied to the basic attendance estimate.

The management of the planned International Exposition in Seattle, Washington in 1962 contemplates an admission charge of \$1.75 for adults and \$1.00 for children.

In estimating 1964-65 revenues from attendance, as shown in the following table, consideration was given to the percentage breakdown between adults, children and multiple admission visitors, obtained from the auditors' report of part of the 1939 season.

ESTIMATED ATTENDANCE REVENUES

			1964	
Adults	20,000,000	× \$2.00 =	\$40,000,000	
Multiple Admissions—Adults	13,000,000	× 1.35 =	17,550,000	
Children	4,000,000	× 1.00 =	4,000,000	
Multiple Admissions—Children	3,000,000	× 0.70 =	2,100,000	
Subtotal	40,000,000	1.60		\$63,650,000
				1965
Adults	16,000,000	× \$2.00 =	\$32,000,000	
Multiple Admissions—Adults	8,500,000	× 1.35 =	11,500,000	
Children	3,000,000	× 1.00 =	3,000,000	
Multiple Admissions—Children	2,500,000	× 0.70 =	1,750,000	
Subtotal	30,000,000	1.60		48,250,000
TOTAL				\$111,900,000

C. Means of Access to Fair

In 1939 the methods of transportation used by the 26,000,000 visitors to the Fair were approximately as follows:

Mode of Transportation	Estimated 1939 Attendance Distribution (1)	% of Total
IRT — BMT Subway	8,100,000	31%
IND Subway	2,100,000	8
Buses, Taxis	2,800,000	11
Long Island Rail Road	7,800,000	30
Automobiles	5,200,000	20 ⁽²⁾
	26,000,000	100%

(1) Based on distribution in May and June 1939.

(2) 1,600,000 cars @ 3 1/2 persons equal 5,200,000 persons, which is 20% of the total 1939 attendance of 26,000,000.

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Figure 3.2. Attendance estimates from the 1964-1965 New York World's Fair "Official Statement." Source: "Official Statement Relating to \$67,500,000 6% Promissory Notes," Agenda-Directors Meeting December 19, 1960, Box 549, Series V. Secretary's File, New York World's Fair 1964-1965 Corporation Records, New York Public Library.

The New York World's Fair had hardly opened for its first season when in May 1964, doubts first rose among the Fair Corporation's management about actual attendance at the fair. Concerns were first raised by George Spargo, the individual whom Moses installed to replace John Hanes. As the General Manager for the Triborough Bridge & Tunnel Authority,³² Spargo himself was part of Moses's inner circle, and Moses had recommended Spargo to the Fair's directors on the basis of his reputation among members of New York's banking fraternity.³³ It is possible that this dual allegiance may have also led to Spargo's concerns. Aware of this dual allegiance, Spargo tried several times to bring Moses around to not make the Fair's financial statements "too general and should be toned down to eliminate the possibility of embarrassing questions that may arise later," suggesting as well that any reports from the Fair's comptroller, Erwin Witt, be put before the Finance Committee so that they might have "the backing of some people in the banking fraternity who carry considerable weight."³⁴ Moses would have none of

³² Finance Committee, May 22, 1961, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I. General Files, NYFC.

³³ Robert Moses to Fred Brandt, May 2, 1961, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I. General Files, NYFC.

³⁴ George Spargo to Robert Moses, May 27, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC. On Moses's concern about maintaining confidence among the Fair's exhibitors, concessionaires, and other third-party

this, however. “If the word were to get around that the Executive Committee has no faith in a balance to finish the park,” he told Spargo, “it would be futile to make plans for this purpose, and a considerable part of my own interest in the Fair would disappear.”³⁵ In a memo to another Fair staff member, Moses voiced his frustration at Spargo’s dissent: “I am fed up with Spargo’s gloom, threats of questioning, minatory waggings and honestly hope he will quit since he no longer has anything constructive to offer. . . . The show must go on and I haven’t the slightest doubt of its success.”³⁶ Moses’s overriding concern was to fulfill the post-fair program that was to fully develop Flushing Meadows as a city park. And Moses was willing to bend reports as well as sacrifice personal relationships to obtain this, presenting before his banker colleagues a vision of a future that was not possible otherwise except through deliberate performances that misled. Spargo threatened to undermine this deception, and after putting enough pressure on him, Moses got Spargo to resign as Finance Committee chairman, replacing him with George Moore. Moses pressured Spargo to retire, who did so citing “personal” reasons. Moses replaced Spargo with George S. Moore, president of First National City Bank (today’s Citibank), as the Finance Committee chairman.³⁷

Moses may have selected Moore assuming that he would not meddle in the internal affairs of the Fair Corporation. In one letter to Moore, Moses informed him that the banker could leave the fair’s management up to Moses, and would only need to review those problems which were specifically passed on to the Finance Committee. Such problems, Moses described in a letter to Moore, would merely be “incidental emergencies.” To further his point, Moses added that the fair’s finances were sound and that paying off the notes by October “continues to be my ambition.”³⁸ Yet problems continued to brew. In a July 1964 letter to Moore, Moses told him that he was “[g]lad to know you are headed south of the border for a vacation. . . . The Fair will keep and I won’t bother you with midway wails and garbage complaints. Actually, things are going quite well.”³⁹

Throughout the summer of 1964, Moore appears to have remained ignorant of the fair’s problems. Yet by fall of that year, the situation had changed. Moore had recently, and rather painfully, become aware that the Fair did not have enough funds to reopen for its second season in 1965. Not only that, but actual attendance during the six months from April to October 1964, while strong, was nowhere near the originally estimated 45 million. If the original estimates were correct in assuming the second season in 1965 would attract fewer guests than the first, then it seemed likely that the fair would become a financial disaster for investors. To avert this Moore reasoned immediate adjustments in the Fair’s overall program, including budget cuts, were needed. In an event that echoes – at a much greater magnitude – similar concerns by the comptroller of Century 21 a little over two years before, Moore was convinced that reductions in

participants, see Robert Moses to Samuel Rosenman, May 28, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC.

³⁵ Robert Moses to George Spargo, Memorandum, May 27, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC

³⁶ Robert Moses to Samuel Rosenman, Memorandum, May 28, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYC.

³⁷ Robert Moses to George S. Moore, May 28, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC.

³⁸ Robert Moses to George S. Moore, May 28, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC.

³⁹ Robert Moses to George S. Moore, July 1, 1964, A1.02, Finance Committee, Policy Determining Units, Administration, Box 48, Series I General Files, NYFC.

the budget were necessary should their fair have a chance at concluding without a loss to investors.

Moore knew, however, that implementing these budget cuts would be a delicate proposition. Moses held firm in the belief that the slightest questioning of the fair's ultimate success would become a self-fulfilling prophesy. Eventually Moore came to believe that to change Moses's mind he had to challenge the original attendance estimates produced by Madigan-Hyland. Doing so, however, meant that Moore would also challenge the vision that had once held together the group of New York bankers, businessmen, and politicians who had believed in the eventual success of the fair, and Robert Moses's ability to bring that vision about.

Moore began agitating for an outside review. He did not, however, ask that Madigan-Hyland revisit their attendance projections. Moore brought in Henry J. MacTavish, a retired comptroller from David Rockefeller's Chase Manhattan Bank, to examine the fair's overall budget and attendance estimates. It was a move to which Moses reluctantly agreed. But MacTavish's report upset Moses not only in its recommendation to revise the attendance estimates while also implementing strict budgetary controls, but what Moses felt to be condescending language. To say that a falling out between Moore and Moses followed would be an understatement. As their dispute boiled over into the national press, it would mark the fair with a legacy of corruption and cronyism. While the report in substance emphasized the need to revise the fair's budget and attendance estimates in light of the fair's actual performance during its 1964 season, something Moses felt he had already done when he cut operating expenses by a third, Moses took personal exception at MacTavish's language. In one instance, MacTavish wrote that "[f]easibility adjustments, clairvoyance and crystal ball gazing all will be accorded full range in final presentation as it relates, in futuro, to paid gate admissions and correlative revenues," to which Moses wrote in the margins, "[r]ubbish" as it was a direct challenge to what he saw as the foundation of the overall program at the fair: the estimated 70 million attendance.⁴⁰ A heated exchange ensued between Moses, Moore, and the rest of the Finance Committee. In protest, Moore and four of his fellow Manhattan banking colleagues including David Rockefeller, resigned from the fair's Finance Committee. Speaking on behalf of the group at a "hastily called press conference," Moore claimed that Moses not only "failed to provide them with requested detailed information about [the fair's] finances," but also that there was clear evidence the Fair does not have sufficient and necessary capital to operate before reopening its gates in April 1965. In his letter, Moses accused Moore of "[s]abotaging the fair," and that much of the fair's financial distress was caused by Moore's own decision to repay a quarter of the outstanding bond notes before it was necessary to do so.⁴¹ Certainly relations between Moore and Moses were far from what they were barely one year earlier, when Moore told Moses that he would "go on a picket line" to have the post-fair Flushing Meadows park named "Robert Moses

⁴⁰ Robert Moses to George S. Moore, November 10, 1964, A1.19, MacTavish, Henry J., Comptroller, Administration, Box 64, Series I General Files, NYFC. Robert Moses to Henry J. MacTavish, November 6, 1964, A1.19, MacTavish, Henry J., Comptroller, Administration, Box 64, Series I General Files, NYFC. Henry MacTavish to Robert Moses, Letter of Transmittal, December 10, 1964, A1.19, MacTavish, Henry J., Comptroller, Administration, Box 64, Series I. General Files, NYFC. Henry MacTavish to Robert Moses, "Letter of Transmittal," December 10, 1964, A1.19, MacTavish, Henry J., Comptroller, Administration, Box 64, Series I General Files, NYFC.

⁴¹ "Text of Moses' Statement on World Fair's Finances," *New York Times*, January 21, 1965, 25; "Five Top Bankers Quit World's Fair Group, Score Financial Policy; First National City President Says New York Fair Needs Substantial Funds by April 22," *Wall Street Journal*, January 19, 1965, 8; "5 Bankers try to Wreck Fair, Moses Says," *Chicago Tribune*, January 21, 1965, D10.

Park.”⁴² Ultimately, the fair did reopen, but with a much reduced overall program, and the fair closed deeply in the red.⁴³

The Moses-Moore exchange illustrates how, regardless whether the New York fair would ultimately have seen the estimated 70 million attendees or not, it was the lack of a mechanism for the fair’s executives, staff, and board members to maintain confidence about the exposition’s future success which led to a breakdown of comity between Moses, Moore, and the rest of the Finance Committee. The parallels between this example, and the case from Seattle’s Century 21 Exposition discussed in the previous chapter (when the comptroller at that fair threatened across the board budget reductions), give insight into this. Doubts about the financial performance of both fairs were raised internally among management and staff shortly after both opened. Among the Seattle group, as we have seen, confidence about that fair’s future performance was maintained by consultants from ERA. With the New York fair, however, this confidence was largely based upon faith among all involved that 70 million would arrive. There was no perceived need to have that confidence maintained by Madigan-Hyland, nor any other firm for that matter: recall George Spargo’s comment about the attendance estimates in the prospectus being a distraction from the real work that needed to be done. Once that confidence came to be questioned by Spargo, Moore, and others in the Finance Committee, without an outside mediator that all believed could prognosticate the future, a breakdown of cooperation between Moses and the Finance Committee ensued.

Operations Research at the Fair

Madigan-Hyland was charged with producing the fair’s attendance estimates because of the particular role they had played in previous Moses projects. Since Jones Beach, Moses had relied upon Madigan’s firm to develop revenue and expense estimates, which he and others then used to lobby state and federal government, as well as private investors, for funding.⁴⁴ There was, therefore, an established relationship of trust among Moses, Madigan, and Madigan’s employees. Furthermore, like ERA and Disney, Madigan-Hyland, in part because of the successes of Moses had achieved a reputation among others as experts in their client’s particular industries.⁴⁵ There was therefore little need to bring in an outsider to build confidence in the fair’s future success among prospective investors, in contrast to members of Seattle’s World Fair Commission.⁴⁶

⁴² Exhibit G: George S. Moore to Robert Moses, February 24, 1964, in Robert Moses, "World's Fair Reply to George S. Moore," January 21, 1965, Folder. A1.02, Finance Committee, Policy Determining Units, Administration (1965), Box 48, Series I. General Files, NYFC.

⁴³ Samuel, *The End of the Innocence: The 1964-1965 New York World's Fair*, 61-88, Rydell, Findling, and Pelle, *Fair America: World's Fairs in the United States*, 105-106.

⁴⁴ Caro, *The Power Broker: Robert Moses and the Fall of New York*.

⁴⁵ The banking elite of New York understood the utility of Madigan-Hyland in rhetorical persuasion; in the early 1950s, the World Bank hired Madigan-Hyland to evaluate Colombia’s railway system, in light of that nation’s application for a loan to modernize it. The bankers turned to Madigan-Hyland to world bank loan to expand Colombia’s railway network. Loan made in 1952. Part of terms of loan meant that Colombian government had to conduct an “extensive administrative, financial and operational reorganization of [its] railroads,” work that Madigan-Hyland as “consulting engineers” were involved in; see International Bank for Reconstruction and Development, “Report and Recommendations of the President to the Executive Directors on a Proposed Loan to the Ferrocarriles Nacionales de Colombia for a Railroad Extension Project in Colombia,” June 7, 1955, http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2002/05/30/000178830_98101903174690/Rendered/INDEX/multi0page.txt (accessed June 3, 2016).

⁴⁶ Originally, the WFC commissioned two researchers at the University of Washington to do the initial feasibility studies. However, once serious planning began, and Seattle’s local investment community pushed for sound business practices, commissioners turned to Stanford Research Institute to develop attendance estimates.

Other firms did attempt to sell the Fair Corporation their services. Many solicitations were market research surveys.⁴⁷ But there were also a number of proposals for services that included operations research. Operations Research, Inc., and Arthur D. Little, Inc. both tried to sell the Fair Corporation services based upon this new field. The Fair Corporation rejected all of these proposals. The Fair's decision reflects debates among practitioners as to the utility of operations research in national and nuclear policy during the late 1950s, especially on the limits of useful analysis.⁴⁸ RAND's Charles Hitch and one of wartime OR's founders, P.M.S. Blackett, both believed that OR was not to be taken as an analytical panacea.⁴⁹ Hitch in particular was concerned that an average operations researcher, while competent in his field, might cause more harm than good if he lacked knowledge in other areas. At the same time, he acknowledged that there were analysts who possessed knowledge outside of OR, and their studies were competent, although the actual technical content of OR was minimal.⁵⁰ Others, however, such as Russell Ackhoff, argued that it was scientifically unethical for an operations researcher to ignore areas of policy in which they posed "no special expertise."⁵¹ But both Hitch and Ackhoff's debates centered upon the level of policy that an operations researcher sought to be included, not the particular character of that context. Thus, Hitch argued that there was little an OR practitioner, using OR in a narrowly defined technical sense, could do at the level of advising the Indian government on economic planning. Ackhoff suggested the opposite.⁵² The New York Fair suggests that it is the peculiarities of context which mattered the most in terms of when and where operations research was applied.

The OR proposals received by the fair were rejected in part because of the peculiar context of the New York Fair. Moses intended the fair's planning and operations to reflect a particular vision of American democratic capitalism. At a dinner before the Greater New York Planning Council in May 1960, Moses outlined how this would be accomplished. There would not be "a one-man decision as to the character, scope and cost of their exhibits." Instead, the free enterprise system would coordinate the activities of exhibitors. The fair would also be financed properly, with the reputations of those "direct[ing] the enterprise, the Directors, governing committees and staff" securing the bond issue. "[E]very cent" would be paid back, with "at least a small balance after Flushing Meadow has been fully restored as a public park. ... There will be uniform, equitable charges based on a realistic budget. ... Our reputations," Moses concluded, "are at stake."⁵³

One proposal came from Operations Research, Inc. to implement PERT, or Program Evaluation Review Technique (which was later used by Montreal at its Expo '67 Fair). PERT had been used previously on other projects, including NASA's space program. Operations Research, Inc. hoped to add the fair to that list. The Fair Corporation rejected their proposal, however, asserting that it did not meet its needs. The fact that Operations Research, Inc. submitted their PERT proposal in late 1963, after most of the exhibitors had already signed leases and had broken ground on their buildings might have also made PERT seem to be too

⁴⁷ Stuart Constable to Water G. Barlow, March 16, 1964, Services - Research N-Z (1959-1963), Box 469, Series I. General Files, NYFC.

⁴⁸ Thomas, *Rational Action: The Sciences of Policy in Britain and America, 1940-1960*, 425.

⁴⁹ *Ibid.*, 425, 428, 432.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*, 428.

⁵² *Ibid.*, 425-432.

⁵³ Robert Moses, "Remarks of Robert Moses on the World's Fair of 1964 and 1965 at a Dinner of the Greater New York Planning Council," 5, May 3, 1960, VII. Disney -- New York World's Fair -- Remarks of Robert Moses on the World's Fair of 1964 and 1965 at a Dinner of the Greater New York Planning Council. 1960, Box 83, Series 7: Project Research Materials, 1957-2004, HAP.

much, too late. Yet the technical skills of the Operations Research, Inc. staffers as demonstrated through the PERT proposal encouraged Erwin Witt, the Fair's comptroller, to invite Operations Research, Inc. to submit a bid to provide services for the Fair's own market research survey needs. Operations Research, Inc. rather bluntly declined this invitation.⁵⁴ In any case the PERT proposal may have come too late to have any chance of consideration. The system, intended to rationalize construction projects, may have also appeared superfluous to a team which had successfully built hundreds of public works projects in New York, often under budget and without missing deadlines.⁵⁵

The fair received another unsolicited proposal from Arthur D. Little, Inc.'s (ADL) New York office to address the problem of long queue lines. Moses and his staff became acutely aware of this issue while studying the experiences of the Seattle fair. Moses's Vice President of Operations, Stuart Constable, noted that the "big complaint [among Seattle fairgoers] seem[ed] to be the lines at the good exhibits. It appears that we may have the same sort of difficulty."⁵⁶ Another engineer, Anne Behnke, who paid Century 21 a visit in 1962, noted in her report that "the good exhibits" at Seattle, including "[t]he Science Pavilion, Century 21, Ford, Bell Telephone and several of the State exhibits... all had long lines which in many cases required at least an hour or more waiting time."⁵⁷ While the problems with long wait times did not seem to have a noticeable impact on the Seattle Fair's popularity, Constable and other executives at the Fair Corporation nonetheless worried that similar scenes at their own Fair might have a negative impact on attendance. But for Constable and his colleagues, the problem of queue lines would be resolved pragmatically through conversations among the various exhibitors, concessioners, and the Fair Corporation - much in the spirit that Moses had outlined in his Greater New York Planning Commission speech. What exhibitors did within their leased plots was largely their own business. This included queue line management: so long as an exhibitor's or concessionaire's lines did not spill over into the areas between exhibitors, the Fair Corporation remained hands off. With one attraction in the Fair's Lake area, for example, Constable did not care how the concessionaire handled their lines, just so long as those lines did not extend outside their lease area and impact the space of other exhibitors.⁵⁸ Proposals appearing to expand reach of the Fair Corporation into the internal operations of individual exhibitors were therefore rejected.

Whether ADL realized this did not dissuade them from trying to gain the Fair Corporation as a client. The firm was eager for the high-profile business of the Fair Corporation. ADL's first entry into the Fair was through an anonymous client asking them to do a market survey of the feasibility of a multi-exhibitor building known as "Project '64." Completed under the leadership of ADL's H. Donald Wilson, "Project '64" was intended more as a teaser to grab the attention of Fair Corporation staff. The tactic worked. ADL's findings, which asserted that 21 of the 42 companies surveyed indicated they would not participate in the Fair, stunned top executives when it was read in August 1961, including General Potter, the Fair's chief of construction.⁵⁹ Wilson played his cards right. He knew that Fair executives would want to know

⁵⁴ Liss to Witt, November 1, 1963, Svcs.-Research-Operations Research, Inc., Box 469, Series I. General Files, NYFC.

⁵⁵ Hilary Ballon and Kenneth T. Jackson, "Introduction," in *Robert Moses and the Modern City: The Transformation of New York* (New York: W. W. Norton & Co., 2007).

⁵⁶ Constable to W. Earle Andrews, August 17, 1962, Century 21 Exposition-Behnke, Anne Report, Box 96, Series I. General Files, NYFC

⁵⁷ Memorandum, Anna R. Behnke to W. Earle Andrews, 14 aug 1962, Century 21 Exposition-Behnke, Anne Report, Box 96, Series I. General Files, NYFC.

⁵⁸ B.S. Holderness to Stuart Constable, 22 jan 1964, American Machine and Foundry 1960-1964, Box 296, Series I. General Files, NYFC.

⁵⁹ Memorandum Potter to Paunch, August, 24, 1961, Services - Research A-M (1959-1964), Box 469, Series I. General Files, NYFC.

what those companies were, and he did not divulge their names for months, citing agreements of maintaining client anonymity.⁶⁰ During this time, Wilson cultivated a business partnership with Robert Stone, head of the Fair's Industrial Section. Stone, who among Fair staff was one of the more independently minded (a characteristic that Moses valued in several situations where he placed Stone in charge of negotiations with stubborn exhibitors)⁶¹, asked Wilson's team to do an analysis of the area of the Fair under his direct control. ADL completed a "Preliminary Rough Estimate of Total Cost of Typical World's Fair Industrial or Special Exhibit Building" for Stone, which Stone then used to allocate exhibitor space and establish rent fees in the Industrial Section.⁶²

Wilson, who would go on to become an ADL vice president and later found the news service Lexus-Nexus,⁶³ had bigger things in mind than market surveys and space allocation work. Like his counterpart at ERA, Harrison Price, Wilson too sought to maximize revenue from clients by proposing a project that not only would have put him at the highest levels of the New York Fair Corporation, modelling the patronage structure of the operations research analyst.⁶⁴ Through rational planning, Wilson and his ADL team would provide consensus building from the Fair Corporation down to the individual exhibitor and concessionaire.

Since 1960, Wilson and his team at ADL had been studying the problem of queue management and crowd control at fairs and museums, including spending months collecting data related to crowd flow at the Disneyland amusement park. Two members of Wilson's team, Robert Weiss and Serge Boutourline, Jr., had also completed an extensive study of Seattle's Century 21 fair. Eager to demonstrate the practical applications of this work, Wilson's team developed a proposal for a "priority reservation system to control the queues at major crowd bottlenecks" on the Fair's grounds. This would "supplement the various techniques now available" to the Fair Corporation "to influence crowd distribution of queues." Wilson reminded Fair executives that queue lines "are remembered and described to friends [of fair visitors]:" if the fair goer's experience was bad, not only would attendance suffer but the opportunities for fairgoers to see as much of the Fair as possible, and spend money, would be limited.⁶⁵

⁶⁰ Memorandum William H. Ottley to Daniel Catlin, Jr. April 26, 1962, Services - Research A-M (1959-1964), Box 469, Series I, NYFC.

⁶¹ Moses to Stone, July 2, 1962, Monorail System - Disney, Walt Transportation, Box 297, Series I, NYFC

⁶² Evans to Sheldon, June 22, 1962, Services - Research A-M (1959-1964), Box 469, Series I, NYFC.

⁶³ Katie Hafner, "Donald Wilson, 82, Pioneer of a Database, Dies," *New York Times*, November 25, 2006 2006.

⁶⁴ Thomas, "Operations Research Vis-à-Vis Management at Arthur D. Little and the Massachusetts Institute of Technology in the 1950s."

⁶⁵ H. Donald Wilson to Edwin Witt, October 28, 1963, Services - Research A-M (1959-1964), Box 469, Series I, NYFC.

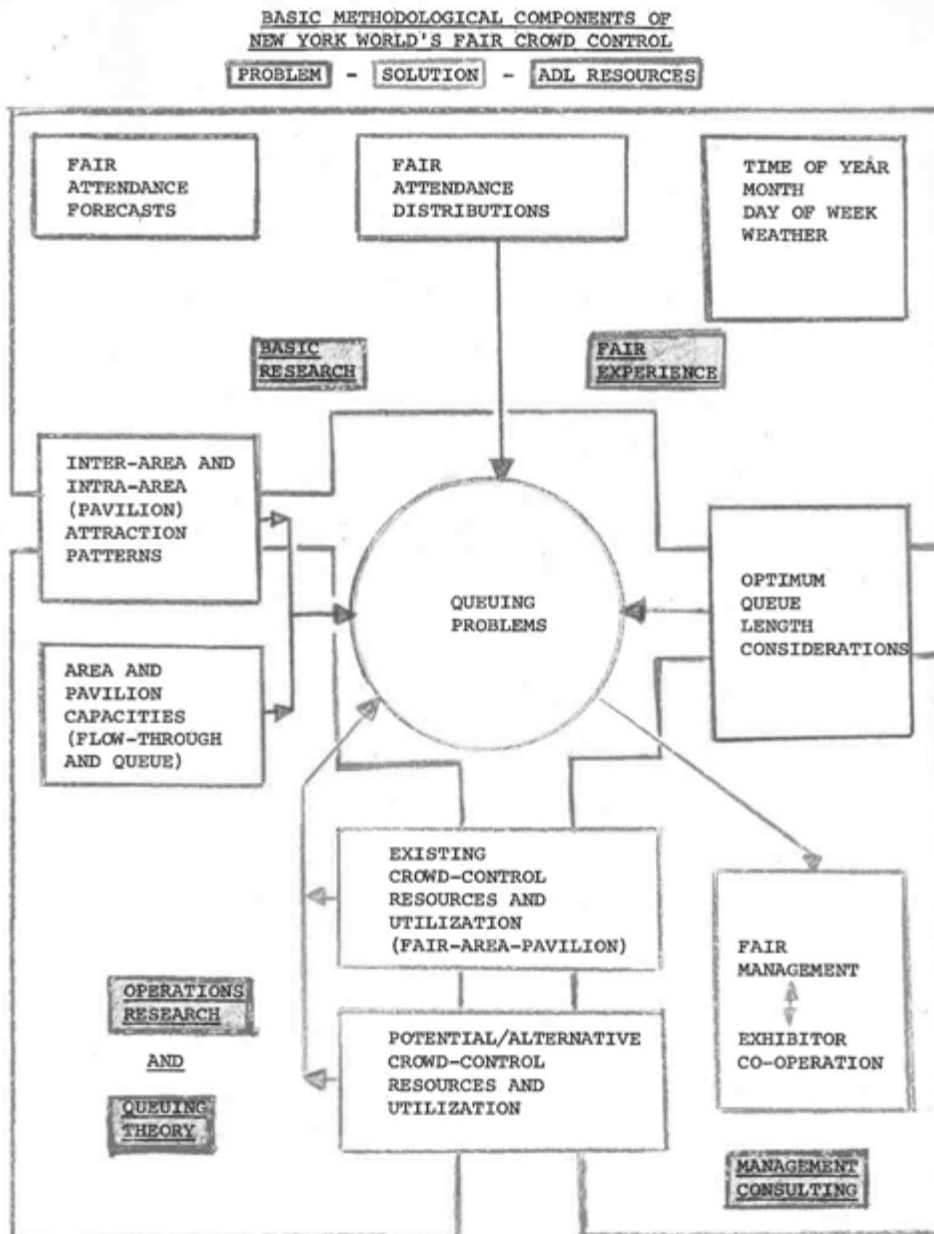


Figure 3.3 Schematic illustration showing the logical operations of a proposed crowd control system for the 1964-1965 New York World’s Fair. Note how Arthur D. Little would provide not only operations research services, but also “basic research,” previous experience, and management consulting. Source: “Arthur D. Little Proposal for Crowd distribution and queue control,” Services - Research A-M (1959-1964), Box 469, Series I. General Files, New York World’s Fair 1964-1965 Corporation Records, New York Public Library.

As the schematic prepared by Wilson illustrates (Figure 3.4), the solution to queuing challenges involved the Fair Corporation assuming, with ADLs guidance, a greater level of

control and mediation among the various exhibitors, concessionaires, and others involved in the Fair's operations and production. "Operations Research and computer application techniques," wrote Wilson, "will permit us to find solutions for the queuing problems of many pavilions, taking these pavilions together as a system." Statistical techniques in this model would utilize previous time series data compiled by ADL researchers to help create forecasts for the New York Fair attendance, breaking down the 70 million by attraction type. Wilson also argued that ADL was the right firm to do this work. Their experience deploying OR solutions in various industries and resolving conflicts between different stakeholders would help generate buy-in from the other exhibitors for this solution, particularly when ADL presented statistics illustrating the impact of poor queuing on the financial performance of attractions and pavilions.⁶⁶ As the diagram indicates, ADL would also provide management consulting, "basic research," and also claimed to have previous experience in the fair industry.

The assumption in the proposal that, for this to be a full, scientifically and methodologically sound solution to the problems of queue management, the Fair Corporation would need to implement all of the pieces in the chart. And it only made sense to have ADL, with its basic research into fair attendance patterns, its work in OR and queueing theory, and its previous experience working as a management consultant for a range of industries, should coordinate the entire project. OR, in addition to providing the scientific basis, would also, ADL hoped, justify the business proposition to the Fair Corporation. OR was a buzzword of the time, which ADL of which specifically marketed itself as a provider. But there was also another advantage, which the discussions among OR practitioners discussed above also understood: as a systems approach, OR advocated practitioner exposure at the level of the highest levels of management within an organization. This, of course, meant more work which the client would need to approve. Put another way, OR proposals implicitly promised firms more revenue - if clients bought into them.

Considering that Moses and his team sought to avoid direct management of any given exhibitor's operations, Wilson's proposal was doomed from the start. Witt, the Fair Corporation's comptroller, was skeptical about what value the proposal would bring to the Fair. Witt asked Stuart Constable, the Fair's VP of Operations, for a second opinion. Constable not only agreed that ADL proposal was not worth the expense, he also felt that ADL was the wrong company to do business with, based on a negative experience he had with the firm.⁶⁷ Stone, himself sold on the merits of ADL's methodology and approach to the Fair's problems, tried vainly to convince his colleagues of the proposal's benefits. But his efforts failed. In the end, ADL's contribution to the 1964-65 New York World's Fair was as a sponsor for the Technology Exhibit within the New England States Exhibition's Court of Industry and Commerce.⁶⁸

IBM and the Entry Gates

ADL's proposal suggested using operations research, at the time considered by many observers to reflect the cutting edge approach to solving management challenges. The Fair Corporation's rejection of ADL's proposal should not, however, be interpreted to mean that the fair was against using all new methods. The fact that Witt had asked Operations Research, Inc.,

⁶⁶ H. Donald Wilson to Edwin Witt, October 28, 1963, Services - Research A-M (1959-1964), Box 469, Series I, NYFC.

⁶⁷ Witt to Constable, October 29, 1963, Services - Research A-M (1959-1964), Box 469, Fair Corporation Records, NYPL. Constable to Witt, October 30, 1963, Services - Research A-M (1959-1964), Box 469, Series I, NYFC.

⁶⁸ Stone to Wilson, January 17, 1964, Services - Research A-M (1959-1964), Box 469, Series I, NYFC. *For your Information...*, March 1, 1964, Arthur D. Little, Inc., Series III Box 1, Arthur D. Little, Inc., records, MIT Archives (hereafter "ADL")

to do a marketing study shows that he was impressed by the skill in applied mathematics demonstrated by analysts at that firm. Both Constable and Witt, as well as others at the fair, did believe that such methods could be used to resolve other problems they faced. In particular, the 70 million attendance estimate led to much anxiety among the fair's designers regarding one piece of the fairgrounds in particular: its entry gates (Figure 3.4). The Fair Corporation not only called in outside experts, but also asked IBM's Service Bureau Corporation to create a queuing theory simulation that would model how the gates would perform during peak attendance.

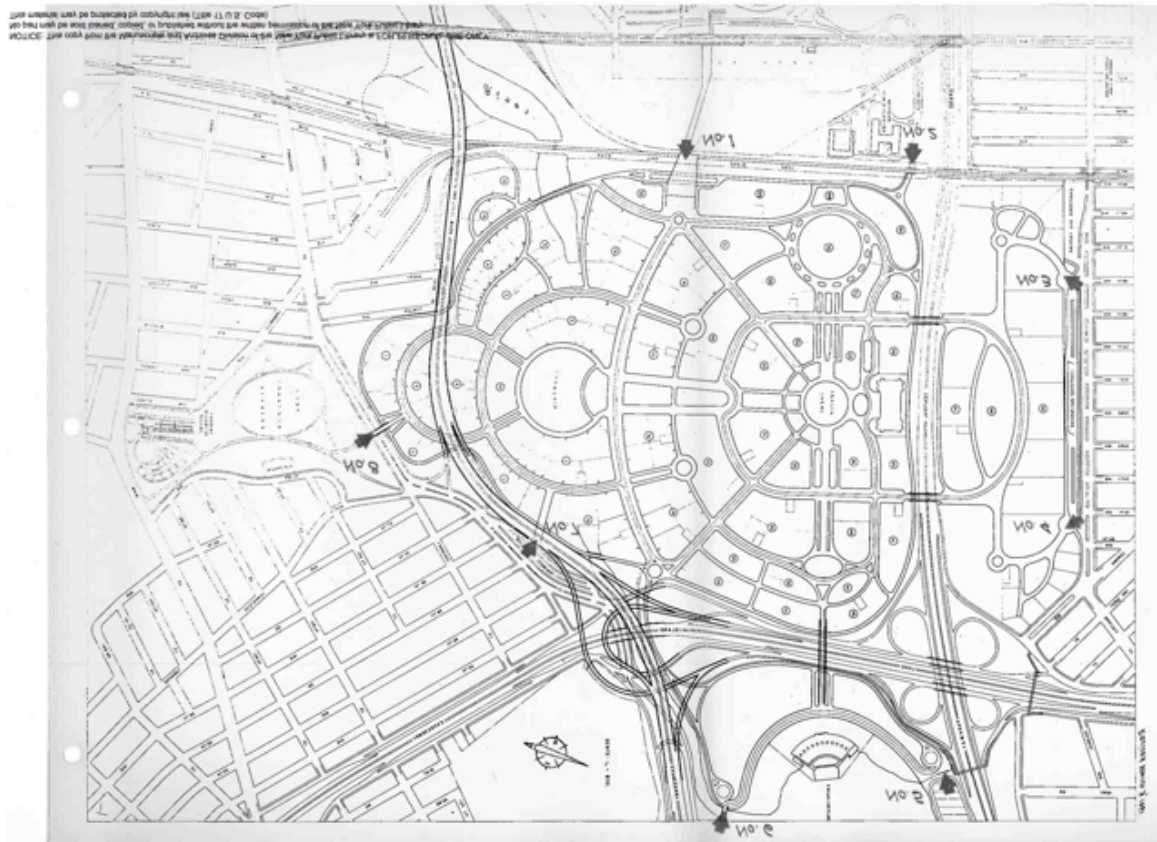


Figure 3.4. Plan of 1964-1965 New York World's Fair indicating entrance gate locations.
Source: "New York World's Fair Entrance Ticket Booth Report," C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Box 169, New York World's Fair 1964-1965 Corporation Records, New York Public Library.

Concerns about entry gate design became acute in December 1960, when consulting engineer Earle Andrews asked Constable to hire a consultant from Disneyland's operations staff, Doc Lemmon.⁶⁹ Lemmon, himself an SRI alumnus along with Price and Wood, worked with Carl E. Holgren, an engineer at Andrews & Clarke, to develop information on the number of turnstiles and entrance booths the Fair would require.⁷⁰ The two reasoned that, aside from

⁶⁹ Earle Andrews to Mr. Stuart Constable, December, 5, 1960, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I. General Files, NYFC.

⁷⁰ "New York World's Fair 1964-1965 Pedestrian Entrance Ticket Booth & Turnstile Requirements, Prepared by Eugene R. Lemmon - Disneyland, Inc. and Carl E. Holgren - Andrews & Clark" Revised - March 3, 1961, C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Box 169, Series I, NYFC.

Disneyland, similar attractions upon which they could base their estimates included two horse race tracks, Belmont and Aqueduct, as well as the Los Angeles County Fair and Texas State Fair.⁷¹ Yet at the Fair Corporation were not entirely confident in Lemmon and Holgren's findings. In particular, some were concerned that while Lemmon's study offered "a definitive basis for the design of the gate[s]," they may need to make adjustments difficult to do while the fair was in season.⁷² Others were more blunt in expressing their lack of confidence in the Lemmon report.⁷³ The Fair Corporation turned to IBM's Service Bureau Corporation to run a "machine test" simulation to determine the number of turnstiles required, and Constable held off on giving the go ahead to proceed with planning for the entrance gates until the results of IBM's test were completed.⁷⁴

The results of IBM's machine test came in February, and were a tour de force performance of 1960s computer simulations involving stochastic modelling. The IBM consultants spared no expense at employing a range of new techniques and methods in their work. Programming a queueing theory simulation in FORTRAN, the IBM consultants determined the total number of windows needed to keep visitor wait time at the gates under 10 minutes. The consultants were keen to notice that the answer to this question was "not obvious a priori" - a gesture to the dissent and lack of consensus among their clients about the gate design. Yet the IBM consultants also understood that none of this would matter were they not able to break down the complex mathematics into terms their clients could understand, and therefore appreciate the consultants' performance. To this end, the complexities of the mathematical model were first laid out, but then reduced to two simple variables: one for the "average rate of [visitor] arrival[s] per minute" and the other the average time to service each visitor in minutes. The program produced a table depicting a range of possibilities.⁷⁵ If that were not enough, the IBM consultants invited the Fair Corporation staff to their offices to observe an IBM 357 work their problem in real time.⁷⁶

⁷¹ New York World's Fair 1964-1965 Pedestrian Entrance Ticket Booth & Turnstile Requirements, Prepared by Eugene R. Lemmon - Disneyland, Inc. and Carl E. Holgren - Andrews & Clark" Revised - March 3, 1961, C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Box 169, Series I, NYFC.

⁷² M. R. Pender to General Potter, January 27, 1961, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC. Projecting visitor flow rates through the gates was also thought important to staff members for determining the number of Pinkerton guards required.

⁷³ General William Whipple, Jr. to Stuart Constable, January, 31 1961, Box 169, C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁷⁴ Stuart Constable to Erwin Witt, February 6, 1961, Box 169, C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁷⁵ "A Queueing Theory Analysis of Ticket Booth Requirements at the 1964 World's Fair, Prepared for the World's Fair Corporation," The Analytical Services Department of the Service Bureau Corporation, a subsidiary of IBM, February 1961, Box 88, A4.8, Internat'l Business Machines Corp., Attendance, Administration, Series I, NYFC.

⁷⁶ J. T. Paul to Erwin Witt, March 13, 1961, Box 88, A4.8, Internat'l Business Machines Corp., Attendance, Administration, Series I, NYFC.

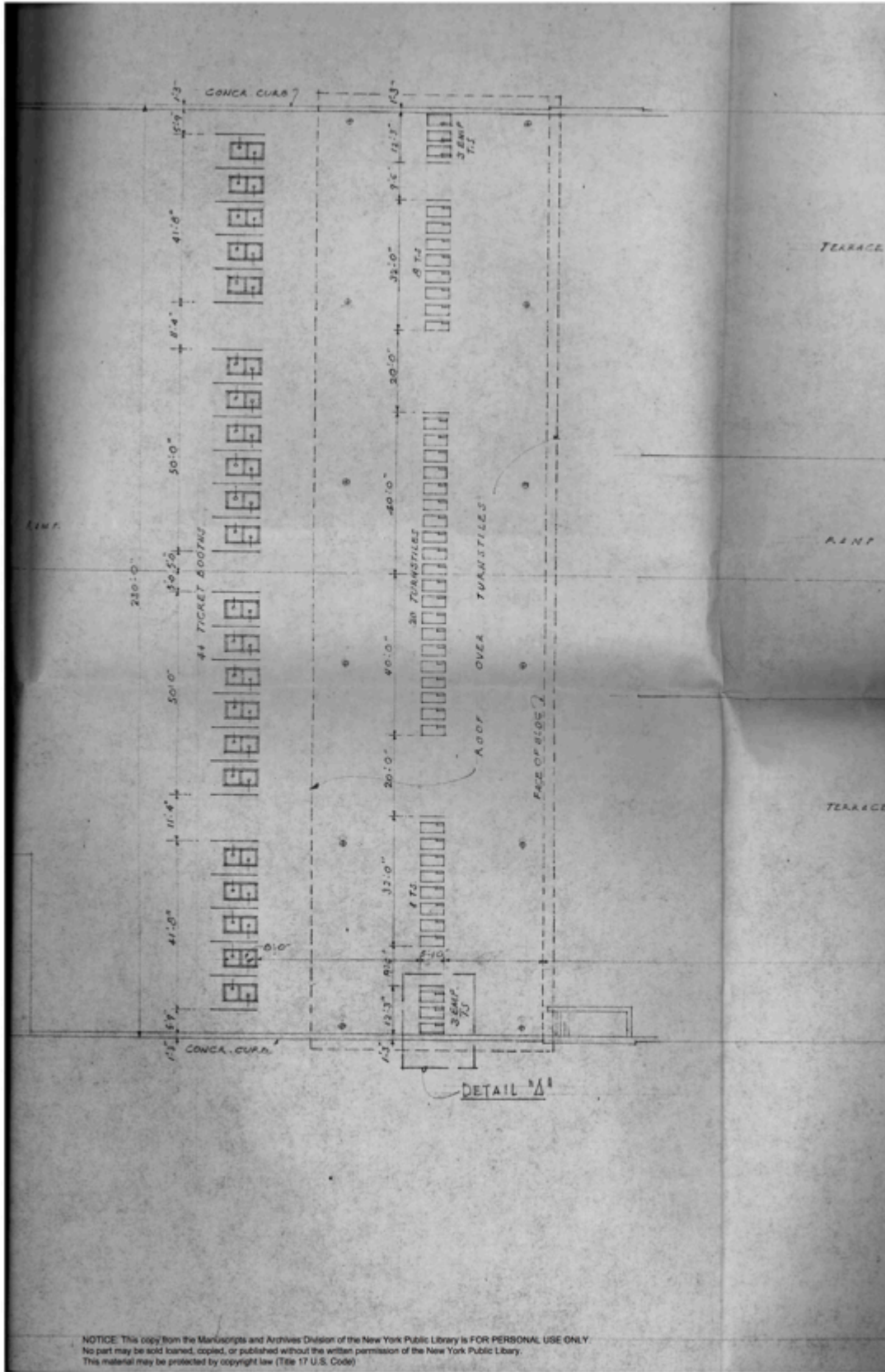


Figure 3.5. Detail from engineering drawings for turnstiles at 1964-1965 New York World's Fair. Source: "New York World's Fair Entrance Ticket Booth Report," C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Box 169, New York World's Fair 1964-1965 Corporation Records, New York Public Library.

Among staff at the Fair Corporation, confidence rapidly replaced uncertainty as the results of IBM's machine test were reviewed and circulated. As Pender reported to Potter, Lemmon and Holgren's report had recommended 76 ticket booths at 8 different locations, based on a peak hour capacity of 60,000 visitors, with each booth handling 600 to 800 visitors per hour. The IBM study estimated that, depending on various future circumstances that stochastic modeling could account for, "between 67 and 81 booths" would satisfy flows of 600 to 800 visitors per hour through the gates. With some relief and jubilation, Pender exclaimed to General Potter, "It's a check!"⁷⁷ With this confidence regained among the Fair's staff, planning for the gates could proceed, and engineering drawings (Figure 3.5) were soon made.

This did not however mean that the question about the main entry gates was completely resolved, and the number of turnstiles would change over the next few months and even after the fair opened. Parts of Gate 7 were found to be within an exhibitor's space. At Gate 8 changes were needed to prevent overcrowding on a bridge.⁷⁸ Even as late as January 1962, there was still a lack of consensus as far as the physical design of the ticket booths and turnstiles were concerned. One such dispute concerned a 2" lip on ticket booth windows, which would be "desirable to avoid having people reach within the booth for their change." Witt, in reviewing the plans for the booths, noticed that these lips had been removed, and insisted on their reinstatement.⁷⁹ Lemmon and IBM also developed their numbers before basic site engineering, such as test borings for the gate structures, had been completed.⁸⁰ Concern about total expense also played a factor. Eventually, these sorts of issues and concerns lowered the original 75 turnstiles recommended by Doc Lemmon and IBM down to 69.⁸¹ Just two months into the 1964 season, the turnstile numbers proved inadequate based on how visitors actually entered the fairgrounds.⁸²

It is tempting to think of the use of a computer simulation to determine the best turnstile configuration as a case of poor planning due to not taking account of possibilities not addressed by the model. Had that been done then the additional turnstiles needed so desperately barely two months after the Fair's opening would have already been in place. Yet this reading ignores the role that outside experts, and their performances as experts, played in building confidence among Fair Corporation staff to begin with. Lemmon, a Disneyland veteran, worked with another

⁷⁷ M. R. Pender to General Potter, March 20, 1961, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁷⁸ M. R. Pender to General Potter, March 20, 1961, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁷⁹ Erwin Witt to General William Whipple, Jr., January 3, 1962, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁸⁰ C. E. Mergentime to Mr. William Whipple, November 16, 1962, Folder. C3.114, Entrance Towers-Test Borings-Raymond Concrete Pile Division, Entrances, Exits, Turnstiles, Construction, Series I, NYFC.

⁸¹ Erwin Witt to Mr. Moses, June 10, 1963, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

⁸² Carl A. Ostling to Joseph Bergin, July 15, 1964, Box 169, Folder. C3.114 Entrances, Exits & Turnstiles, Ground Structures, Construction, Series I, NYFC.

consulting engineer to provide a recommended number of gates. His experience and expertise, and the performance thereof, did help build some confidence, yet so great was the uncertainty about the need to properly size the entrance gates among staff that it was not until IBM returned the results of their queueing theory simulation that Constable felt comfortable moving forward with the entrance design. Details such as whether or not the 2" lip on ticket booth windows should be left or not were not so crippling that it would force a new consensus. Thus, the later adjustments downward from the recommended number of turnstiles should be viewed instead within a culture where confidence had already been achieved.

Chapter Four

“Is Walt Disney serious...?:” Innovation at WED Enterprises, 1959-1964

In mid-October 1962, Robert Moses (at the time President of the New York World’s Fair 1964-1965 Corporation) and his deputies were desperately seeking sponsors for WED Enterprises’ ground-breaking – and very expensive – proposed attractions for the New York Fair. With the fair scheduled to open in just 19 months, time was of the essence.¹ Originally founded as the corporate entity through which Walt Disney designed and built Disneyland in Anaheim, California,² WED Enterprises had by the early 1960s transformed into an engineering and design firm. After a visit to Disneyland in April, Moses had put his full support behind finding sponsors for WED’s innovative designs. Yet finding companies who would commit the money needed proved challenging. Ford Motor Company seemed likely to commit for a themed ride in their pavilion. The State of New York turned down sponsorship of a proposed exhibit that would use Disney’s Circarama, having selected another, less expensive, 360-degree cinema projection technology. Another potential sponsor for a “Pan American Highway Circarama” also seemed likely to turn down a WED attraction. But what Moses (or Mr. Moses, as those who worked with him called him) was most concerned about was “One Nation Under God.”

Based upon an earlier attraction that WED had been working on for installation at Disneyland,³ “One Nation Under God’s” centerpiece was an Audio-Animatronic Abraham Lincoln robot. Since first seeing it earlier that year, Moses was convinced the robotic president must be at the fair. But like the two Circarama proposals, WED’s cost estimates were high. The proposed financing arrangements and projected returns developed by WED’s economics consultants, Economics Research Associates (ERA), looked unreasonable. “Is Walt Disney serious about realistic financing of the [Lincoln attraction]?”, Moses asked his construction chief, General William E. Potter. Moses requested that Potter re-examine the figures provided by Disney, with the goal, Moses hoped, of putting together a financial picture of the proposed attraction that would convince a potential sponsor that the walking, talking Abraham Lincoln was a “reasonable” investment.⁴

Moses’s exasperation at the estimated expense of Disney’s “One Nation Under God” speaks to the challenges of technological transfer and innovation during the Cold War in America outside of the military-industrial-academic complex. On the one hand, as put by one of Moses’s lieutenants, the Audio-Animatronic Lincoln robot would “be one of the top attractions at the Fair,”⁵ and as such would insure that the Fair would be a top notch show. But Moses did not want his Fair Corporation, the non-profit entity established to build and operate the New York Fair, to fund attractions. Instead, he sought to have exhibitors finance and build their own,

¹ Robert Moses to General Wm. E. Potter, Memorandum, October 19, 1962, Folder. P1.6, Disney Walt (1960-1964), Amusements, Participation, Box 315, Series I. General Files, NYFC.

² On WED’s founding Chapter 1.

³ Gabler, *Walt Disney: The Triumph of the American Imagination*, 648-653.

⁴ Samuel I. Rosenman to Robert Moses, June 28, 1962, Folder. A6., Disneyland - Rosenman, S. - Report, Fair Planning, Administration, Box 97, Series I. General Files, NYFC. Robert Moses to General Wm. E. Potter, Memorandum, October 19, 1962, Folder. P1.6, Disney Walt (1960-1964), Amusements, Participation, Box 315, Series I. General Files, NYFC.

⁵ Samuel I. Rosenman to Robert Moses, June 28, 1962, Folder. A6., Disneyland - Rosenman, S. - Report, Fair Planning, Administration, Box 97, Series I. General Files, NYFC.

in contrast to earlier fairs.⁶ But getting Lincoln presented numerous challenges. Not only was the technology still unproven (WED engineers were still working out problems right up to the fair's opening), the exhibit's projected cost dissuaded many prospective sponsors.

On the other hand, Walt Disney saw an opportunity in the New York Fair to fund research and development at WED, and thus transform the firm into one providing engineering and design services for a wider range of clients.⁷ Disney had founded WED Enterprises at the suggestion of his brother Roy in 1953, to use as the entity through which Disneyland would be designed and built. In the years since the park's opening in 1955, Disney had steadily moved WED towards greater independence from the studio, Walt Disney Productions.⁸ WED continued to develop new attractions for Disneyland, buying patents and licensing technologies (including a \$17,000 patent acquired from the U.S. Navy's Polaris project) to serve as the foundation of new attractions such as the Enchanted Tiki Room and Alweg Monorail.⁹ Thus the objectives of WED and the Fair Corporation had a common interest in persuading a third set of interests, those of the potential sponsors. Each prospective sponsor, be they a corporation, government, or other entity, had their own budgetary requirements. Both Moses and Disney hoped to convince some of these potential sponsors of the value that the attractions under development at WED – and association with the Walt Disney name – would provide.

Central to the process of finding a potential sponsor for a WED exhibit was the Los Angeles-based firm Economics Research Associates (ERA). Founded by Stanford Research Institute alumnus Harrison A. Price (who liked to go by the nickname “Buzz”) in 1958 with financial backing from Walt Disney,¹⁰ the firm played a key role in the history of WED Enterprises from 1957 to 1964. That time period was one of explosive growth at the firm, when it was still independent from the studio.¹¹ WED had licensed or outright acquired patents for technologies both old and new and was rapidly finding new, innovative uses for them. Under Disney's guidance, it ventured into new industries, including architecture and exhibit design, whose inner workings were largely unknown to WED's staff. The firm's head, Walt Disney, had at this time a rocky relationship with the parent company Walt Disney Productions. As a public company, the studio was still recovering from the expense of Disneyland's construction, and relations between Disney and his brother Roy (who ran the administrative side of the studio) were tenuous at best. In this volatile context, Disney enlisted the aid of ERA to move his projects involving WED and the park forward.

ERA acted in several ways to help WED negotiate these challenges. First, the methods that ERA used shaped the negotiations among WED and its business partners. Previously decisions about new attractions and funding for Disney's ideas were characterized by the give and take of the relationship between Disney and his brother. With ERA involved, rigor and calculation filled that role.¹² Second, ERA consultants mediated between the different knowledge

⁶ Samuel, *The End of the Innocence: The 1964-1965 New York World's Fair*.

⁷ Gabler, *Walt Disney: The Triumph of the American Imagination*, 648-649.

⁸ *Ibid.*

⁹ *Ibid.*, 654.

¹⁰ Price, *Walt's Revolution!: By the Numbers*, 30.

¹¹ WED Enterprises grew to employ 300 by the early 1960s. See Gabler, *Walt Disney: The Triumph of the American Imagination*, 663.

¹² For another perspective on rationality in decision making during this time, see Erickson et al., *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*.

domains of finance, design, and engineering.¹³ Price, Marlett, and others at ERA translated the paper designs of WED engineers into forecasts which at their core used statistical techniques. WED also turned to ERA to bring in knowledge that the firm lacked. This was particularly important when Disney guided WED towards the New York Fair, as few at WED had real experience in the norms of the exhibits industry.¹⁴ ERA also helped manage WED's project load by dissuading Disney's business partners from pursuing projects through demonstrations of the project's expense, a notable example being a joint venture with Hallmark to open a theme park in Kansas City.¹⁵

Most importantly, both through the methods used and its position as an independent research firm, ERA sold WED objectivity. At a time when the Disney brothers were not talking to one another and Walt was moving WED away from interference by the studio, hoping to establish it as a fully-fledged, independent engineering firm, the need to turn to an outside consultant to help broker deals involving not only Disneyland and the studio but also other third parties was of critical importance. In this sense, objectivity was not a tangible good. It was a way of doing and going about one's work – a professional ethos. Selling it, then, meant in very fundamental ways that ERA was selling WED a staged performance. Historians of science have studied the changing meaning of objectivity over time, as well as teased apart its various threads.¹⁶ As this chapter suggests, objectivity is done through personal and group interactions. Through this work with Disney, Price's ERA learned that a performance of objectivity was not something fixed but rather varied from one particular instance to another.

In the case of Price and his analysts, the starting point of what objectivity meant began with a textbook approach to their craft as industrial economists. This gave them a set of methods from which Price and his employees could choose. The needs and demands of WED shaped what tools they selected. As the firm's biggest client during this time, WED influenced how Price understood how to perform as an independent research firm in ways that were both technical and non-technical.¹⁷ The WED project work also gave Price exposure to how other firms went about their work, and afforded him an opportunity to think through how best to act like an objective, independent consultant.¹⁸ Disney's influence on ERA's business and methodological practices would have profound implications for both Price and the firm's future.

Early Audio-Animatronics Development at Disneyland

After Disneyland's opening in 1955, the Park continued to evolve and change. Attractions opened and closed in response to park management learning about their new business and the public's interactions with it. "Outs," or land parcels surrounding the park not acquired in the 1954 purchase, were bought. As part of the push to get the park opened and financed, many concessionaires were given very flexible lease terms which prevented Disney from consolidating

¹³ On consultants and other "go-betweens" as mediators of knowledge, see McKenna, *The World's Newest Profession : Management Consulting in the Twentieth Century*, Schaffer, *The Brokered World : Go-Betweens and Global Intelligence, 1770-1820*.

¹⁴ Harrison Price to Richard Irvine, October 5, 1960, VII. Disney -- WED Design Function. 1960. Restriction B., Box 83, Series VII, HAP.

¹⁵ Richard F. Irvine to J. C. Hall, draft, [December 6, 1962], Disney -- Hallmark Project. 1962-1963. #235, Box 82, Series VII, HAP. Royal Clark to Don Hall, December 19, 1962, Disney -- Hallmark Project. 1962-1963. #235, Box 82, Series VII, HAP. Richard F. Irvine to J. C. Hall, December 6, 1962, Disney -- Hallmark Project. 1962-1963. #235, Box 82, Series VII, HAP.

¹⁶ Daston and Galison, *Objectivity*, Porter, *Trust in Numbers : The Pursuit of Objectivity in Science and Public Life*.

¹⁷ Harrison A. Price to Ellsworth G Reynolds, March 24, 1964, Economics Research Associates -- Correspondence -- Correspondence, 1966, Box 136, Series VIII, HAP. Disney once advised Price to buy a class ring in advance of a client meeting. "Walt's Call Friday June 15th," VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents). 1962., Box 83, Series VII, HAP.

¹⁸ Bill Cottrell to Buzz Price, February 1, 1961, Disney -- Monorail Extension. 1960-1961 #31, Box 83, Series VII, HAP.

operations. As those agreements expired, concessionaires considered unfit for the park's future direction were weeded out, and other control over the parks operations were consolidated underneath Disney's leadership. Key to this effort was the departure of Disneyland's first general manager, C. V. Wood. In his place, Disney established a Park Operations Board.¹⁹

Keeping visitors inside the park was key to its financial well-being. Aside from their ticket which granted access to the park's grounds, visitors bought food, beverages, ride tickets, and other merchandise. Although Disney had the final say in ideas for new attractions,²⁰ actually moving forward meant engaging with his brother and to a lesser extent the studio. Three new rides from the late 1950s are a case in point: the Matterhorn, Tomorrowland Submarines, and the Tomorrowland Monorail. With the park finally breaking even and turning a profit, Disney's brother was still hesitant about these new expensive attractions.²¹

While the park matured, relations between the brothers Disney reached a boiling point. Since the 1930s, their personal relationship had slowly deteriorated partly in response to financial pressures. The success of Disneyland, growth of WED Enterprises, and the latter firm's siphoning of funds from both the studio and park through a complex arrangement of licensing agreements and personal services contracts that bound Walt, WED, and WDP together, gave Roy concern that this "might bring renewed and unwelcome scrutiny from the Securities and Exchange Commission and even a possible stockholders'" revolt over the sweetheart contract with Walt."²² Disney formed WED at his brother's suggestion, which allowed the studio to remain more or less isolated from the uncertainty of Walt's ideas, while also giving his brother freedom from the studio's bureaucracy.²³ But WED's formation was not a popular development among some at the studio, with three members resigning from WDP's board, followed by a stockholder lawsuit in 1953.²⁴ Tensions came to a head when Disney's personal services contract with the studio came due for renewal in 1960. Disney, who jealously guarded WED from interference from both his brother and studio, had also moved the firm to a new building in a Glendale industrial park. The two brothers stopped talking to one another completely by 1960; one Disney executive was given the unfortunate job of ferrying messages between them. It was, perhaps characteristically, Disney's brother who made the first move to back down and a steady detente followed. Negotiations for the personal services contract were concluded in April 1961, and by late June the brothers had made peace.²⁵

As Disney's brother's hesitations about the Monorail, Matterhorn, and submarine rides suggest, Disney faced an ongoing struggle with his brother and the studio who would push back on Walt's very expensive and unproven ideas. Partly to respond to this pushback, Disney reached out to one of the former SRI consultants who had worked on the original location and feasibility studies for Disneyland, Harrison A. Price. Two years after Disneyland's opening in 1955, Price

¹⁹ Gabler, *Walt Disney : The Triumph of the American Imagination*, Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*.

²⁰ Joseph Van Arsdale France, *Backstage Disneyland: A Personal History*, Unpublished Manuscript, [1980], 72-73, Buzz Price Materials -- Van Arsdale France, "Backstage Disneyland: A Personal History," Unpublished, c1980, Series VII, HAP Papers, UCF. A published version of the manuscript is also available as []. Page numbers refer to the version in HAP Papers.

²¹ Gabler, *Walt Disney : The Triumph of the American Imagination*, 636.

²² *Ibid.*, 663. On the name licensing agreement between Walt Disney and WDP, see *ibid.*, 557-559.

²³ See Chapter 1 of this dissertation. This arrangement also led to some resentment between the two brothers, when Walt funded WED through licensing of his name for use by the studio through another holding, Retlaw. Roy's children were excluded as beneficiaries from Retlaw, whereas the children of both brothers were beneficiaries of Walt Disney Productions.

²⁴ Gabler, *Walt Disney : The Triumph of the American Imagination*, 663.

²⁵ *Ibid.*, 663-667, 866, 867.

left his position as manager of the Southern California offices of SRI to become the Director of Industrial Research at Harvey Aluminum, a southern California aluminum products firm.²⁶ For two years, Price worked for the privately-owned company. There, Price was responsible for managing operations and locating new plants, including a \$50 million aluminum reduction plant in Kentucky.²⁷ Although Price helped develop a rapidly expanding industrial empire that would eventually include operations in Africa, the Virgin Islands, and several U.S. states,²⁸ he found his work there unsatisfying. Not only was the firm's proprietor, Leo Harvey, a detail-oriented micromanager, Price soon realized that unless he was a part of the Harvey family there was little chance of becoming one of the firm's officers.²⁹ An opportunity to go into business for himself came from Walt Disney, when in 1957, Disney asked Price to help with "Operation Bootstrap," a re-imagining of the Chouinard Art Institute of Los Angeles within the Disney organization.³⁰ Shortly after, Price founded Economics Research Associates.³¹

One of the first tasks given to the new ERA was to reorganize WED Enterprises to support the development of Audio-Animatronics. When the Disney brothers first established WED in the early 1950s, a set of contracts between WED and the studio were signed, with a separate set of contracts signed with Disneyland to handle operations and royalties for the Tomorrowland Monorail and railroad which circled the park. But "operating and financial responsibilities" between WED and the other two entities were "very much intermixed." With relationships between Disney and the studio and his brother further deteriorating, and Disney's desire to establish WED as a nominally independent firm, in August WED's Bill Cottrell asked Price to look at ways to sharpen the operating and financial boundaries between WED and the other firms,³² a task complicated by the fact that WED still had a dependence upon the studio's staff and facilities, which work on the Enchanted Tiki Room made plainly clear.³³ The work Price began was a classic example of management consulting work. He first reviewed the three firms' product development; patent and royalty positions, and rights of ownership; and manufacturing, reviewing each as they existed across the three entities. He then developed a new organizational structure (Figure 4.1) which, among other things, included "Corporate Development" "Legal", "Financial" and "Director of Design and Engineering" divisions – notably, ERA would fill the role of "Corporate Development."³⁴ With one fell swoop, Price had achieved the ultimate dream of some operations researchers and industrial engineers: not only

²⁶ Price, *Walt's Revolution!: By the Numbers*, 20, Maisel and Jones, "A History of Stanford Research Institute."

²⁷ Price, *Walt's Revolution!: By the Numbers*, 20. Price to Walter E. Disney, February 12, 1957, Buzz Price Materials -- Correspondence -- Roy O., Roy E., and Walt Disney. 1957, 1959-1961, 1964, 1969, 1971, 1993, 1997, 1999. Box 5, Series VII, HAP.

²⁸ Harrison A. Price, "It's Never Too Late", 15 sept 1966, 3. Speeches -- Optimist Club of LA. It's Never Too Late. 15 Sep 1966. Box 58. Series III, HAP.

²⁹ Price, *Walt's Revolution!: By the Numbers*, 20..

³⁰ Harrison Price to Walt E. Disney, May 16, 1957, Folder: Series VII. Buzz Price Materials -- Correspondence -- Roy O., Roy E., and Walt Disney. 1957, 1959-1961, 1964, 1969, 1971, 1993, 1997, 1999. Box 5, Series 7: Project Research Materials, 1957-2004 (unprocessed), HAP.

³¹ Harrison A. Price, "Matsushita, Sony and the Future of the Leisure/Recreation Business," Presented to: WDI Management, April 25, 1991. Speech, Folder: Series VII. Buzz Price Materials -- Speeches on Walt. 1971-1974, 1991, Box 5, Series 7: Project Research Materials, 1957-2004 (unprocessed), HAP.

³² Harrison A. Price to William Cottrell, August 30, 1961, Folder. Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, HAP. Harrison A. Price to William Cottrell, March 20, 1961, Folder: Disney -- Personnel Recruiting, 1961-1964, #405, Box 84, Series VII, HAP. Harrison A. Price to William Cottrell, August 30, 1961, Folder. Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, HAP.

³³ "Tiki Room – Machine Shop," n.d., Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, HAP.

³⁴ Harrison A. Price to William Cottrell, August 30, 1961, Folder. Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, HAP Papers. Draft Organization Chart, n.d., Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, HAP Papers.

did this work break out of the world of the shop floor, but Price also managed to ensure a position at the heart of executive decisions at WED.

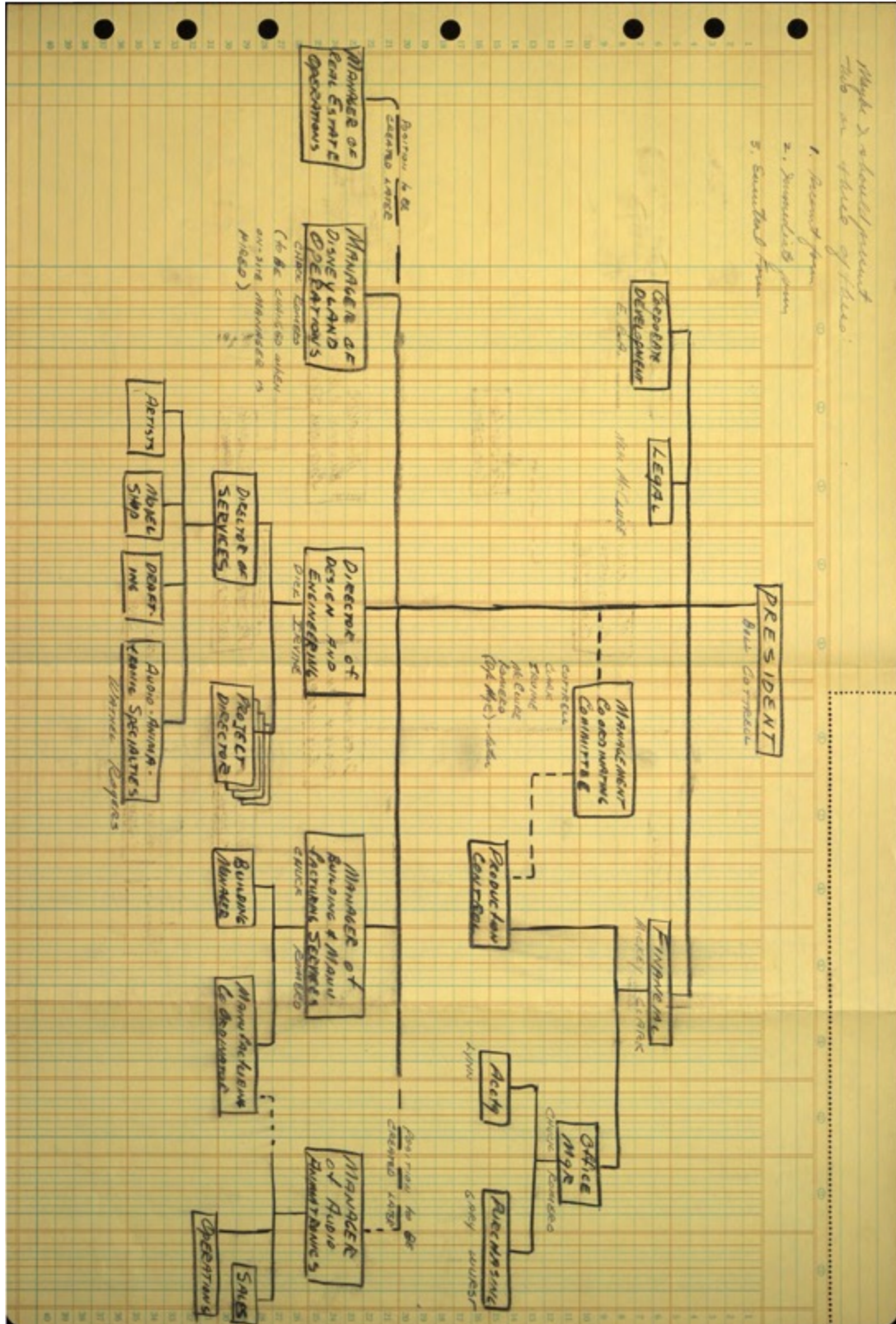


Figure 4.1. Draft Organization chart for WED (ERA). Source: Disney -- Audio-Animatronic Potentials, 1961-1962, #168, Box 81, Series VII, Harrison A. Price papers, University of Central Florida Special Collections.

At the same time, WED acquired use rights for other technologies. Some, such as a patent for tape systems from the U.S. Navy's Polaris project, were recent technological innovations of the Space Age.³⁵ Others, such as a monorail system engineered by the German firm Alweg, were updates of older technologies.³⁶ While ERA was not involved in development of the original Tomorrowland Monorail, it was involved in the extension of the Monorail to connect the neighboring Disneyland Hotel, owned and operated by oil and entertainment magnate (and Disney business associate) Jack Wrather.³⁷ It was a complex deal involving Wrather's firm, Alwac, the studio, Disneyland, and WED, and Price dutifully produced a feasibility study which favored the building the extension. Yet ERA's first draft of the report was returned by WED with specific instructions to include a notice that ERA was contracted "for the purpose of objectively and independently evaluating the economic feasibility of the extension and its value to all parties involved."³⁸

The first attraction featuring Audio-Animatronics was the Enchanted Tiki Room. Called the "Bird Room" while under development, the Enchanted Tiki Room became the first example rather than another concept, the Hall of Presidents. This happened because the Enchanted Tiki Room more readily filled a need to improve food service at the park (visitors were leaving to dine at off-site facilities – one estimate put this lost revenue at \$6 to \$7 million per year). There was also a willing sponsor in the form of Stouffers, who sought to increase its institutional exposure in advance of its own strategic move into the U.S. west.³⁹ With both the park and a potential sponsor open to fund a new attraction, Disney saw an opportunity to finance his first venture into Audio-Animatronics.

WED asked ERA to examine the economic feasibility of the attraction as part of a deal involving Disneyland, WED, and Stouffers, establishing the "values which may reasonably be expected to accrue to the three interested parties...."⁴⁰ Stouffer's had already been "conditioned to the cost" of the Audio-Animatronic attraction after witnessing a demonstration, and expected to make "off the top" payments to WED instead of owning or licensing it. ERA's tasks were to develop cost, revenue, and attendance estimates, and develop a formula to best determine how to "recover the total costs" involved.⁴¹ But the main challenge was to resolve how a joint-venture

³⁵ Paul F. Anderson, "Audio-Animatronics," *Persistence of Vision*, <http://labyrinth.tripod.com/animatronics/history/animatronics101-102/aa.html>, accessed 3/14/16.

³⁶ Gabler, *Walt Disney: The Triumph of the American Imagination*, 654..

³⁷ For more on Wrather and the Disneyland Hotel see Ballard, Donald W. 2005. *Disneyland hotel: the early years, 1954-1988*. Riverside, CA: Ape Pen Publishing, and Ballard, Donald W. 2011. *Disneyland hotel 1954-1959: the little motel in the middle of the orange grove*.

³⁸ "Disneyland Hotel and Park Reveal New \$6 million expansion program," December 28, 1960, Disney -- Monorail Extension. 1960-1961 #31, Box 83, Series VII, HAP.

³⁹ "Memorandum Report: Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland," Prepared for WED Enterprises, Inc., March 8, 1962, 1, Disney -- Disneyland -- Tiki Room -- Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland, March 8, 1962. #345 & #168, Box 82, Series VII, HAP. Working notes, Disneyland -- Tiki Room. 1957-1962, Box 82, Series VII, HAP Papers. "Memorandum Report: Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland," Prepared for WED Enterprises, Inc., March 8, 1962, 1, Disney -- Disneyland -- Tiki Room -- Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland, March 8, 1962. #345 & #168, Box 82, Series VII, HAP.

⁴⁰ "Memorandum Report: Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland," Prepared for WED Enterprises, Inc., March 8, 1962, 1, Disney -- Disneyland -- Tiki Room -- Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland, March 8, 1962. #345 & #168, Box 82, Series VII, HAP.

⁴¹ "Ok to check in with Don Tatum", n.d., Disney -- Disneyland -- Tiki Room. 1957-1962, Box 82, Series VII, HAP.

between Disneyland and WED to build and maintain the attraction would be preferable to an agreement in which WED covered all development and operation costs. The second option put more considerably more financial responsibility on WED,⁴² and ERA concluded that the joint-venture would enable all three parties to recover their initial costs.⁴³ A series of tables contained in the report summarized the relevant financial information.

To back up this conclusion, Price used a graphical solution to determine a break-even point. The graph he produced (Figure 4.3) is a visual argument of the projected deal he also outlined as a flow chart (Figure 4.2). The X-axis represents total show revenue, with the vertical dashed line to the right is the total revenue from the first image (\$174,050). The Y-axis represents total on-going expenses (not including initial construction and design). The point at (117.25,117.25) is the break-even point, or the minimum revenue required for ongoing operations, which was to come from Stouffer's annual amortization support of \$75,250, and WED's minimum contribution to maintenance of \$30,000. The studio and Disneyland would not contribute funds until the break-even point was met. But once that happened they would receive the majority share of surplus revenue, with the three divergent lines to the left of (117.25,117.25) indicating the 20/20/60 split between WED, Stouffers, and Disneyland, respectively.

⁴² "Alternatives," n.d., Disney -- Disneyland -- Tiki Room. 1957-1962, Box 82, Series VII, HAP.

⁴³ "Memorandum Report: Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland," Prepared for WED Enterprises, Inc., March 8, 1962, Disney -- Disneyland -- Tiki Room -- Projected Operations of the Enchanted Tiki Room and Related Restaurant Operations at Disneyland, March 8, 1962. #345 & #168, Box 82, Series VII, HAP.

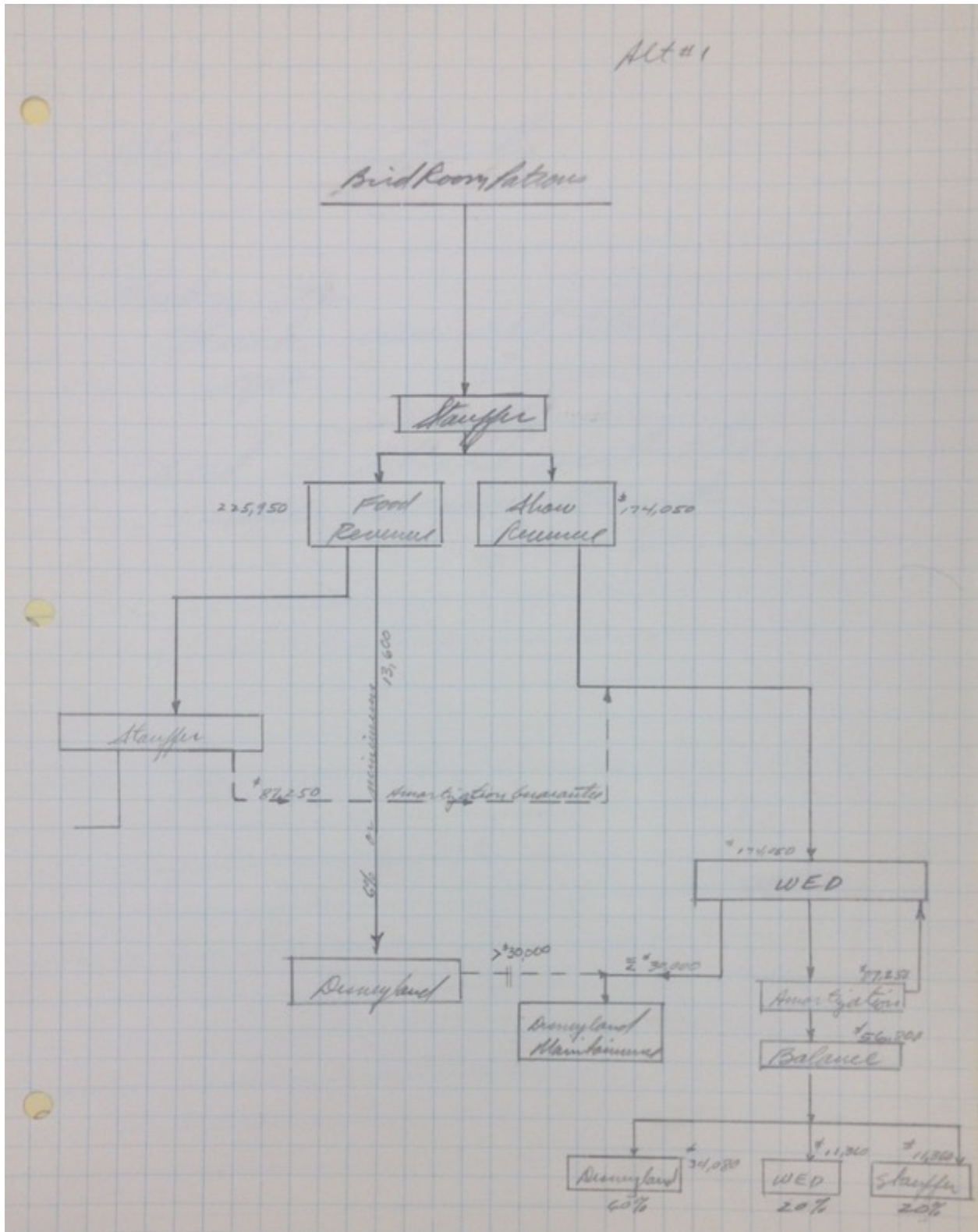


Figure 4.2. Flow chart analysis for Bird Room deal alternative 1. Source: Disney -- Disneyland -- Tiki Room. 1957-1962, Box 82, Series VII, Harrison A. Price papers, University of Central Florida Special Collections.

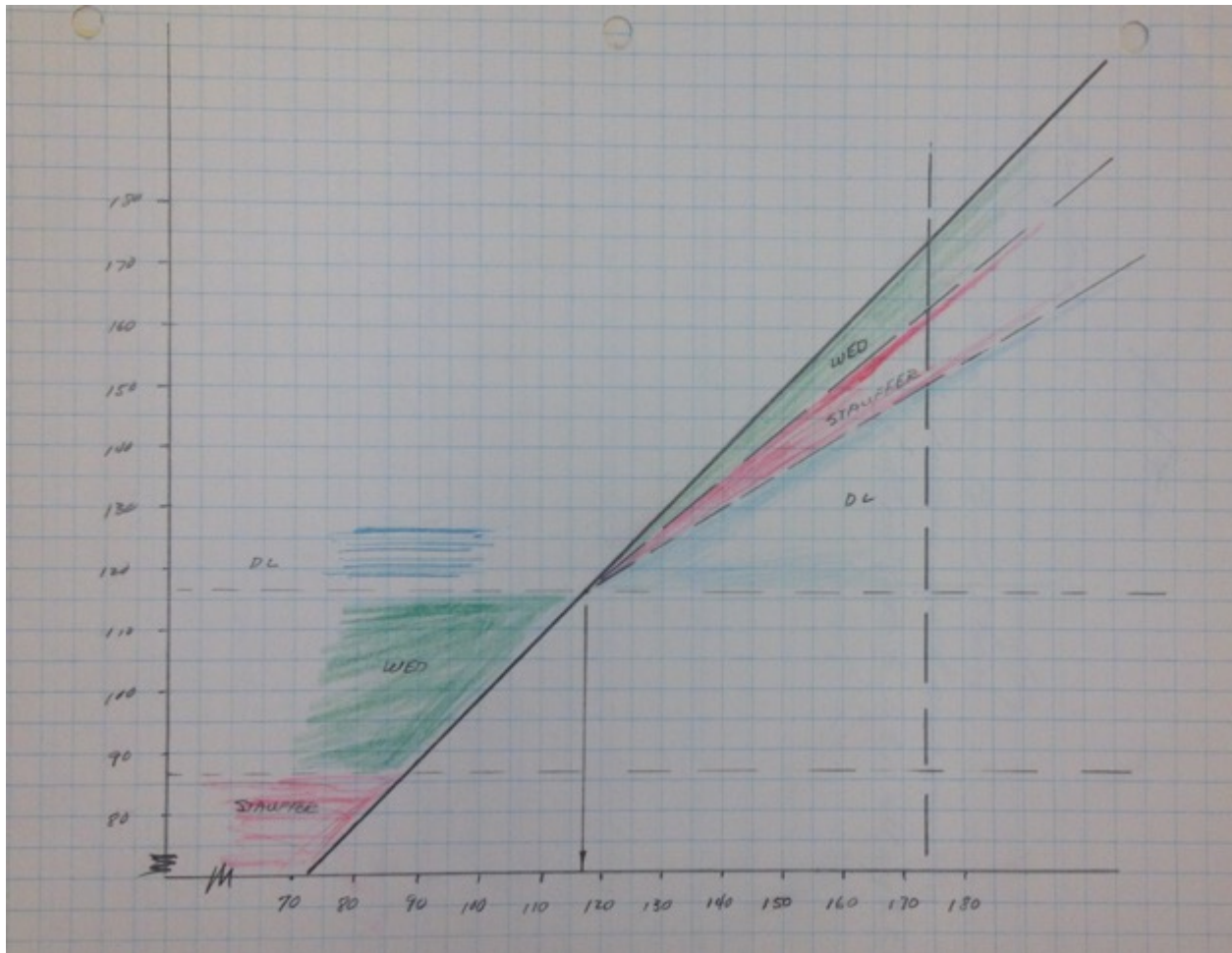


Figure 4.3. Inequality graph used in the analysis of the Enchanted Tiki Room deal. Source: Disney -- Disneyland -- Tiki Room. 1957-1962, Box 82, Series VII, Harrison A. Price papers, University of Central Florida Special Collections.

For unknown reasons, the chart and graph did not make it into the final report. Instead, only pertinent data presented in tabular form with narrative explanatory text appear in the report, although it is likely the graph and chart were shown to representatives from WED, the studio, and Stouffers during presentations. Nonetheless, these two images illuminate how method informed Price’s thinking through the deal analysis, employing rational method in place of reasoning.

ERA’s study worked. Negotiations between Stouffer’s, WED, and Disneyland were successful, and development on the Enchanted Tiki Room moved forward. During audience testing of the dinner show (in which visitors would dine while watching the Audio-Animatronic bird show), however, WED designers realized that audience members tended not to leave at the show’s conclusion, instead hurriedly eating their meals which were largely left untouched while they observed the show. This led to overruns in the show’s cycle.⁴⁴ And so the Enchanted Tiki

⁴⁴ Sam Gennaway, *The Disneyland Story: The Unofficial Guide to the Evolution of Walt Disney's Dream* (Birmingham, AL: Keen Communications, LLC, 2014), 176-177.

Room became a separate attraction under the sponsorship of Dole, with Stouffer's instead opening a nearby restaurant.⁴⁵

The New York Fair Exhibits

ERA continued to serve WED as the firm pursued sponsors for exhibits at the 1964-1965 New York World's Fair. Disney's initial interest in the New York Fair began with the possibility of having large corporations support the development of a WED attraction, especially his beloved Hall of Presidents, a concept that would feature Audio-Animatronic robots of each president. In mid-May, 1960, Disney and Jack Sayers traveled to New York to meet with a group of Fair Corporation representatives. There, Disney outlined some of the ideas he and his team of engineers and designers had developed for potential industrial exhibitors. One of Moses's lieutenants, Stuart Constable, was more than impressed, noting that Disney's ideas amounted to "some pretty spectacular stuff." As he reported to Moses, "[Disney's potential participation] is the best thing I've heard so far. We have in Mr. Disney a man with money, good ideas, and long experience in the business."⁴⁶

But Disney and his WED "Imagineers," as they would later be called, were uncertain about a number of factors crucial to planning exhibits at the fair. How big should an attraction be for a given exhibitor (and how much might it cost)? Is the attraction large enough to insure "a major institutional penetration in the total fair audience"? How many visitors per hour should they expect, and at what times?⁴⁷ From where are these visitors coming from? As the Fair exhibits would also be located thousands of miles from both Disneyland and WED's offices in California, there were also questions about local housing in Queens for on-site staff.⁴⁸ Key to answering these questions was knowing just how many people would attend the fair over its two operating seasons. And while Madigan-Hyland had estimated attendance at 70 million, internal discussions at the Fair Corporation contemplated even higher numbers.⁴⁹ WED staff had some doubts about these estimates, however. The previous year, when Robert Sarnoff of RCA and NBC approached Disney about opening a park in New York Disney asked Price for an analysis. Price concluded that, while there was likely a market for an "Eastern Disneyland," that New York City was not the ideal location due to its climate and the business-oriented character of the city's tourism market, among other factors.⁵⁰ Perhaps from this earlier study, and with designers uncertain about how big to size an attraction, With the fair estimated to draw 40 million visitors in 1964 and 30 million in 1965, WED asked ERA to evaluate "the reasonableness" of the New

⁴⁵ Ibid.

⁴⁶ Stuart Constable to Commissioner Moses, Memorandum, May 20, 1960, Disney Walt (1960-1964), Amusements, Participation, Box 315, Series I. General Files, NYFC.

⁴⁷ Report on New York Fair Attendance, Economics Research Associates, November 21, 1960, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC.

⁴⁸ Disney -- New York World's Fair -- Facility Study. 1961-1962, Box 15, Series VII, HAP.

⁴⁹ W. E. Potter to Mr. Moses, August 10, 1960, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC. Stuart Constable to Commissioner Moses, memorandum, October 24, 1962, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC.

⁵⁰ Price, *Walt's Revolution!: By the Numbers*, 37-38.. "Summary of Disney-oriented Projects on File at E.R.A.," October 18, 1963, Disney -- Disney Construction and Research Bibliography, 1958, 1960, 1963, 1967, Box 81, Series VII, HAP. As Price would later recount, this study established the viability for an eastern disneyland by looking at the attendance rates of visitors to Disneyland coming from the Eastern U.S. states. It also marked the beginning of Disney's interest in a large development project in the eastern United States which would ultimately become today's Disney World. On the evolution of this concept, EPCOT, see Mannheim, *Walt Disney and the Quest for Community*.

York Fair attendance estimates and to “supply information on basic design parameters which would help determine how big a major attraction at the New York World’s Fair should be...”⁵¹

Madigan-Hyland based their attendance estimates for the 1964-1965 fair primarily upon the actual attendance of the previous fair held in Flushing Meadows, the 1939-1940 New York World’s Fair. In their own work, however, Price and Marlett went further, analyzing the official final attendance for international expositions held over the previous 110 years. They noted “that the 1939 New York fair drew total attendance of 33.0 million or 82.5 per cent of its projected paid attendance of 40 million ... and that the 1939 San Francisco fair drew total attendance of 13.0 million or 93 per cent of its projected paid attendance of 14 million...” The recent fair hosted by Brussels in 1958, at 42 million, seemed more of an anomaly than indicative of a trend which would have meant moving the New York Fair estimates even higher. As ERA’s report noted, the Brussels fair attendance “resulted in part from capital expenditures greatly in excess of amounts expended for other fairs, and from enthusiastic support arising from intense competition between eastern and western countries. ... Similar conditions which attract large attendances are not likely to be duplicated in the United States.” Having then established the reasonableness of the attendance estimates, the ERA report went on to break down that number into values that WED’s designers would then take into account when creating proposals for various exhibitors: daily averages in spring, early summer, late summer, and fall; the average daily low and high; peak average daily attendance (in August); how many days the Fair would have visitors over 375,000, and at what times of the day peak crowds would happen.⁵²

Although Disney initially hoped to use the fair as a vehicle to fund development for the Hall of Presidents, prospective sponsors tended to shy away from its cost. Perhaps somewhat surprisingly Moses himself wanted, in addition to the Lincoln robot, an installation of the Tomorrowland Monorail at the fair.⁵³ The Disney-Alweg system was not the first considered by the Fair Corporation. In early 1960, the Fair Corporation asked S. H. Bingham, the former Executive Director and General Manager of the New York City Transit Authority, to put together a proposal for a “Sight-Seeing Monorail” at the Fair.⁵⁴ Later that year, the Fair engaged in discussions with Raymond International for a monorail that would provide point-to-point transportation at the Fair. It would be a “full sized facility of which the one now in operation at Disneyland is constructed to about five-eighths scale,” and estimated to cost \$9 million. The Fair Corporation approached Greyhound (which had already been engaged to provide intramural transportation) about underwriting part of the construction, to which Greyhound replied favorably. Talks collapsed in October 1960, however, when it appeared to Moses that the Fair Corporation would be asked to underwrite eighty percent of the Raymond monorail. Raymond came back with a much reduced proposal of just under \$5 and a quarter million in early 1961, but this too went nowhere. Greyhound had become more ambivalent about the presence of a

⁵¹ Report on New York Fair Attendance, Economics Research Associates, November 21, 1960, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC.

⁵² Report on New York Fair Attendance, Economics Research Associates, November 21, 1960, 2-3, A4.8, Attendance, Corporation Policies, Administration, Box 88, Series I. General Files, NYFC.

⁵³ While Moses did support the Monorail, he was careful to note in the summer of 1963 “I have, by no means, fallen a victim to any Monorail delusions. I was most careful in my talk to the Monorail people that I was referring primarily to an amusement ride and not to mass transportation everywhere. ... it is no universal remedy...” See Moses to Arthur Motley, July 26, 1963, Monorail System (K-Z), Box 297, Series I. General Files, NYFC.

⁵⁴ Resume - Colonel S. H. Bingham; Moses to Hodgkiss, 23 feb 1960; W. Earle Andrews to Moses, 9 mar 1960; Memorandum, Arthur S. Hodgkiss to Moses, 29 feb 1960, Monorail System-Bingham, Sidney S., Box 297, Series I. General Files, NYFC.

monorail at the Fair, and it did not seem certain how much the Fair would gain in revenue, if it would at all.⁵⁵

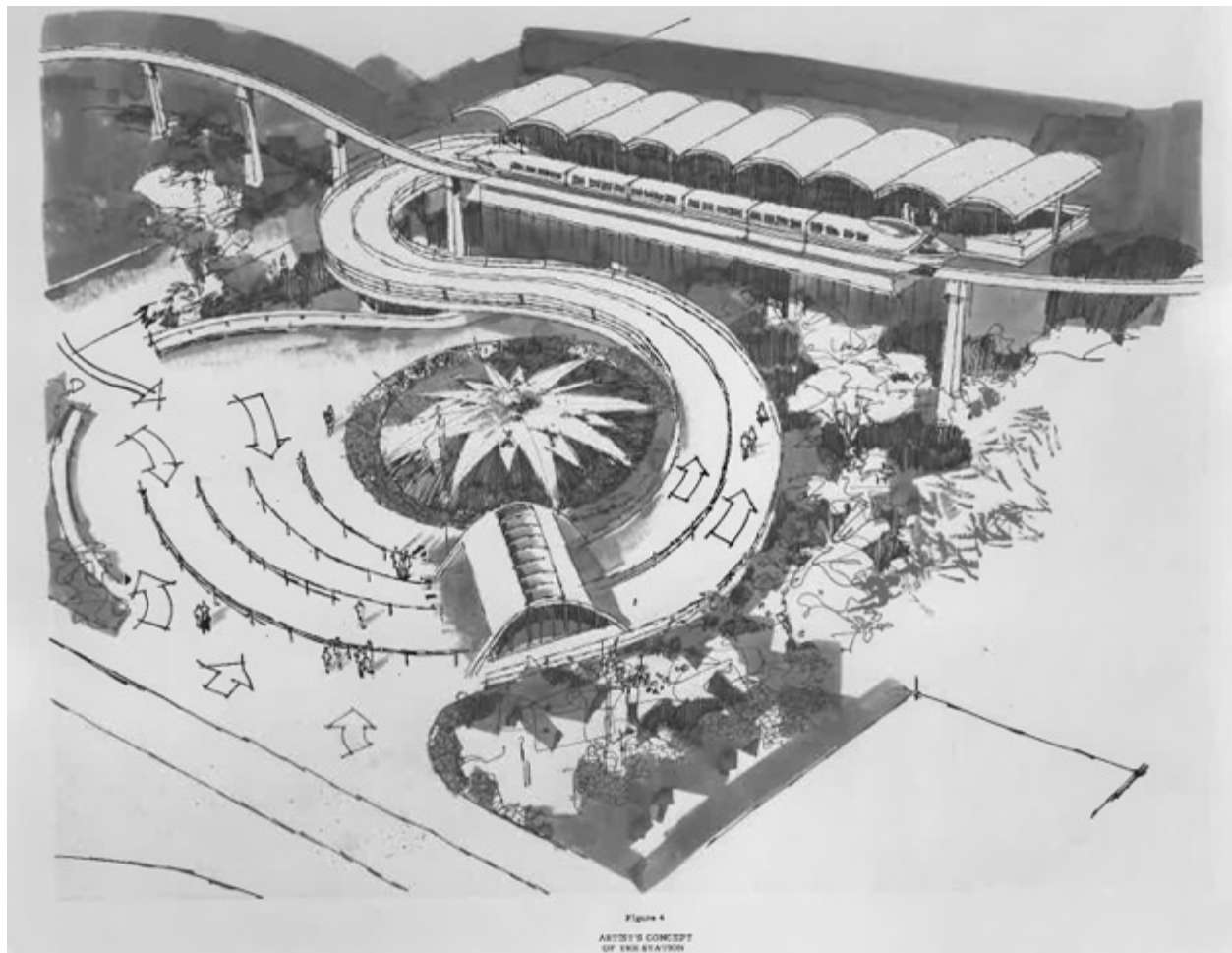


Figure 4.4. “Artists Concept of the Station” Disney-Alweg Monorail for New York World’s Fair. Work coordinated by ERA suggested that a single platform for loading and unloading would have been sufficient, should the project move forward. Note the arrows depicting crowd flow, which suggest a close relationship between the projected attendance and estimated peak and average crowds ERA developed and the mock-up design completed by WED engineers. Source: “Feasibility of the Disneyland Monorail,” Monorail System-Disney, W.-WED Enter. Report, Box 297, Series I. General Files, New York World’s Fair 1964-1965 Corporation Records, New York Public Library.

⁵⁵ Raymond International "Feasibility Report Monorail System for New York World's Fair 1964-1965," Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Constable to Moses, September 29, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Constable to Moses, September 28, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Moses to Ferris, October 12, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Moses to Ferris, November 3, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Ferris to Moses, November 4, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Potter to Moses, February 17, 1961, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC. Potter to Moses, March 7, 1961, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC.

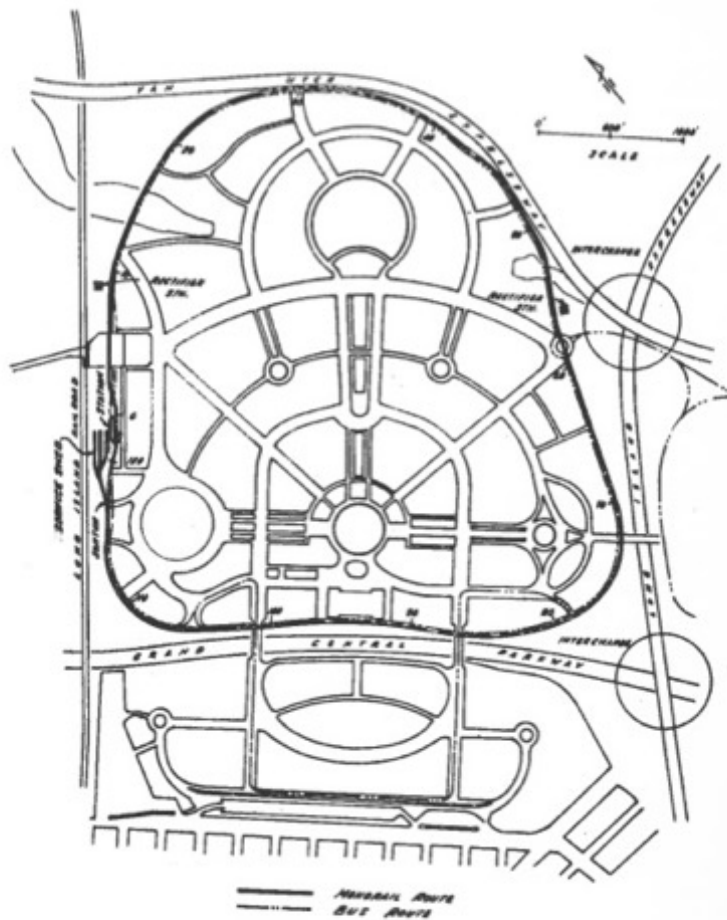


Figure 1
 NEW YORK WORLD'S FAIR 1964-1965
 PROPOSED DISNEYLAND ALWEG MONORAIL ROUTE

Figure 4.5. Proposed route for Disneyland Alweg Monorail at the 1964-1965 New York World's Fair. The route was largely dictated by the terms of the Greyhound contract and Moses's belief that it should be a sightseeing route. This provided the foundation for ERA's feasibility work. Source: Monorail System-Disney, W.-WED Enter. Report, Box 297, Series I. General Files, New York World's Fair 1964-1965 Corporation Records, New York Public Library.

While the Fair Corporation was ambivalent about the Raymond International monorail, it was enthusiastic if not giddy at the prospect of the type found at Disneyland. During the same visit to southern California where he saw the Audio-Animatronic Abraham Lincoln, Moses also inquired about the Alweg Monorail installed in Disneyland's Tomorrowland.⁵⁶ Disney appears to have been lukewarm at best to the idea, expressing interest only "if an economical analysis" indicated that the monorail "was feasible."⁵⁷ In any case, along with feasibility work for potential

⁵⁶ Moses also asked about attractions based on "Rocket to the Moon" and Disney's Circarama, a 360-degree motion picture projection technology. Harrison A. Price to Bill Cottrell, May 1, 1962, VII. Disney -- New York World's Fair, 1960-1963, Box 83, Series VII, HAP.

⁵⁷ Potter to Files, May 1, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

One Nation Under God and Circarama exhibits, WED asked ERA to also explore basic feasibility of a Disneyland Monorail for the fair. The Tomorrow Monorail had been originally licensed by WED from the German firm Alwac for installation as part of Disneyland's Tomorrowland. WED engineers hoped to install Alwac's⁵⁸ system with little modification at the park, but as planning and engineering progressed they encountered several problems which necessitated new designs, and there were also challenges obtaining hardware from Alwac leading to the fabrication of some key components and reengineering of parts of the system. In light of these problems, WED and Alwac had signed a new agreement which made "plans, specifications and engineering calculations" the joint property of both firms. In light of this joint ownership, while WED might possibly stand to profit from designing a monorail for the New York fair, such an agreement also meant splitting a part of the revenue with Alwac.⁵⁹

One other constraint on the deal involved the agreements that the Fair Corporation was about to sign with Greyhound to provide transportation services on the fairgrounds. Unlike the earlier proposal from Raymond International, Greyhound would not be approached to operate or underwrite the Disney-Alweg proposal, likely because of Greyhound's reluctance to underwrite a monorail attraction unless the Fair Corporation would "[underwrite] this thing to the tune of four million...."⁶⁰ With Greyhound's lack of interest in supporting a monorail, Moses sought another sponsor. But Greyhound also saw the monorail to be in competition with its own soon-to-be inked agreements with the Fair Corporation to provide transportation within the fairgrounds as well as sightseeing tours. In response, Moses put his legal team to work in light of the Greyhound contract.⁶¹ As they reported back, a route which circumnavigated the grounds, terminating near a gate and outside the perimeter, would likely not violate the terms of the Greyhound concession agreement. This meant that both the monorail and its terminals could not be entirely within the fairgrounds.⁶² Furthermore, the monorail would provide only a single point for passengers to embark and disembark - there were to be no intermediate stations for passengers to alight at. But even with these restrictions, Greyhound still put up stiff objections, demanding a steep ten-percent of the monorail's gross.⁶³

With these restrictions and Disney's own interests in focusing on finding sponsors to fund development of his prized Audio-Animatronics, the New York Fair monorail was not an attractive proposition for WED. But instead of outright objecting to it and potentially alienating Moses, Disney instead asked ERA to study the problem. The initial information provided to the Fair Corporation by WED on the monorail in late May gave an estimated cost of \$6 million. After reviewing these estimates, Moses's comptroller, Erwin Witt, recommended that the Fair Corporation authorize WED "to make a more thorough survey of costs and prospects," with the Fair Corporation agreeing to pay for that work, estimated around \$10,000.⁶⁴ Price's ERA would

⁵⁸ Correspondence refers to both Alwac and Alweg, at times interchangeably. Alwac generally appears in reference to the parent company based in Germany, and Alweg to the U.S. firm established to market Alwac's products in the U.S., notably the Seattle monorail (which itself was not of the WED-Disneyland variant, and licensed directly from Alweg).

⁵⁹ Neal McClure to Bill Cottrell, May 1, 1962, VII. Disney -- New York World's Fair. 1960-1963, Box 83, Series VII, HAP.

⁶⁰ T. F. Farrell, October 7, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NY Fair Corp Records, NYPL. Moses to Farrell, October 6, 1960, Monorail System-Raymond Intern'l Inc (1960-1964), Box 297, Series I. General Files, NYFC.

⁶¹ Lyttle to Preusse, May 16, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁶² Lyttle to preusse, May 17, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁶³ Constable, Witt and Thornton to Moses, July 17, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁶⁴ Robert Moses to Erwin Witt, May 23, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC. Erwin Witt to Mr. Moses, May 28, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

coordinate this effort. Using ERA in this way was sheer brilliance on Disney's part: not only did he not alienate his business partner, Robert Moses, but by having Price's firm take the lead on the feasibility work, there would be, Disney may have hoped, little doubt as to the objective and independent character of ERA's analysis on the monorail's feasibility.

First, Price was responsible for leading meetings between representatives from WED, the Fair Corporation, and two Fair Corporation contractors.⁶⁵ Following Moses's request for "operating [and] financial data" on June 22nd (the first report produced by the group led by Price only contained engineering specifications on the future monorail, including such data as train velocity, grade handling, beamway height, and so on),⁶⁶ Price produced a feasibility report outline providing information on ride times, passengers carried, projected operating profits, royalty payments, and net profits. Central to this work, however, was determining the optimal number of cars the monorail should have (Figure 4.6). This report was then sent to the Fair Corporation.

⁶⁵ H. A. Price to Bill Cottrell, June 18, 1962, VII. Disney -- New York World's Fair -- Monorail. 1962., Box 15, Series VII, HAP.

⁶⁶ H. A. Price to Bill Cottrell, June 18, 1962, VII. Disney -- New York World's Fair -- Monorail. 1962., Box 15, Series VII, HAP.

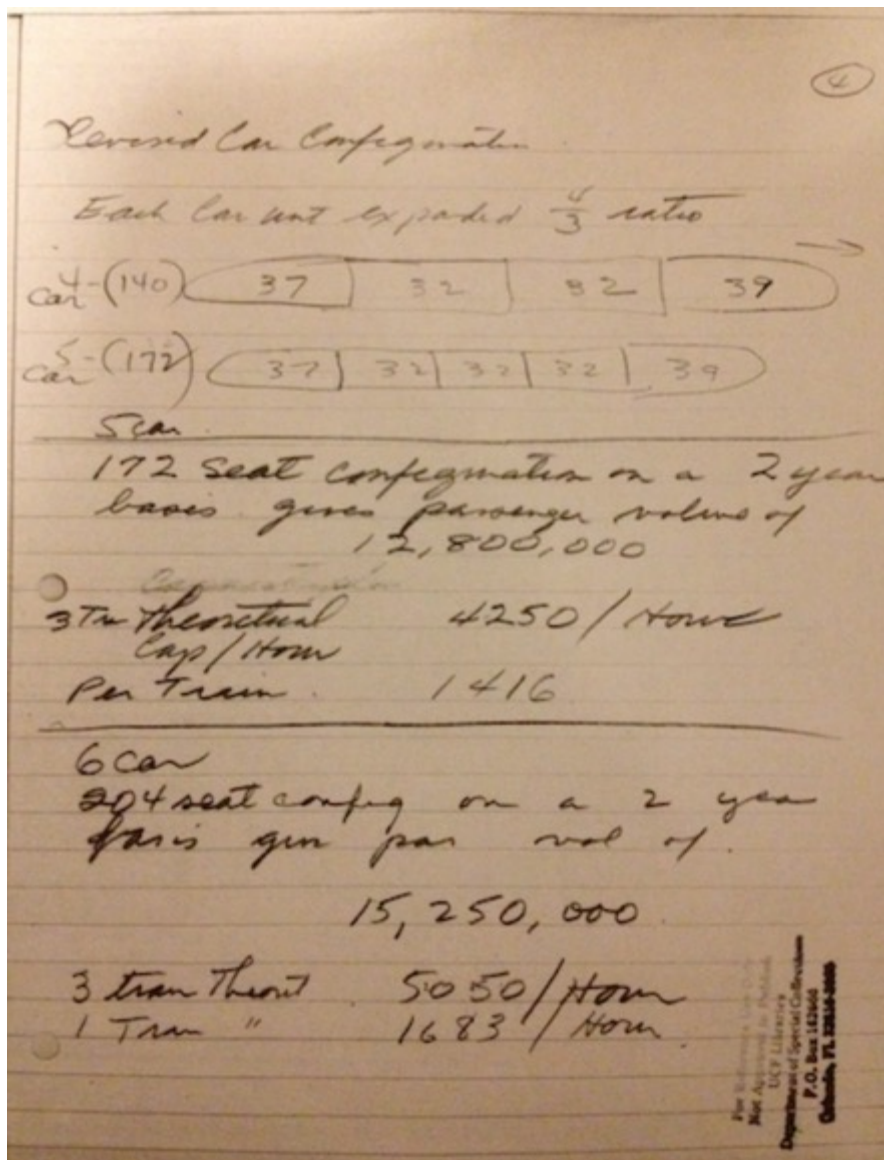


Figure 4.6. Neal Marlett's working notes. Analysis of 4, 5, or 6 car configuration, Disneyland Alweg Monorail for the 1964-1965 New York World's Fair. Source: VII. Disney -- New York World's Fair -- Monorail. 1962, Box 15, Series VII, Harrison A. Price papers, University of Central Florida Special Collections.

The numbers were not encouraging, but Moses nonetheless pushed his team hard on the quixotic effort to find a sponsor to fund his monorail. Moses had Witt write up a memorandum analysis which described the deal as having a “narrow margin of profit” but nonetheless concluding the “slightly over \$4,000,000 investment... a sound business venture.”⁶⁷ Moses put Robert Stone, head of the fair's Industrial Section, in charge of finding a sponsor. With time running out (Greyhound demanded to know what the status was of a monorail at the fair before finalizing their concession agreements), Stone shopped the monorail to RCA, Portland cement,

⁶⁷ Moses to Witt, July 11, 1962, Monorail System - R.C.A., Box 297, Series I, NYFC. Witt to Moses, July 12, 1962, Monorail System-Disney, W.-WED Enter. Rpt., Box 297, Series I, NYFC.

Pittsburgh Plate Glass, Seagram's, and General Foods, among others.⁶⁸ All turned the \$4,000,000 "advertisement" down, with NBC going so far as to say the monorail "[made] no sense as a business venture."⁶⁹ In one last final attempt, Stone went directly to the head of Alwac's U.S. division, Alweg, to see if another deal funded in part by Alwac might be possible. But by the first week of August, it was clear that there wouldn't be a WED monorail at the fair, and Moses declared the effort officially ended on August 10th.⁷⁰ With some dismay after having spent months of time and effort on the feasibility studies, Earle Andrews of Andrews & Clark (the fair's consulting engineering firm) asked General Whipple "I should be grateful to know what the final bill for WED Enterprises is."⁷¹

"One Nation Under God"

More than anything else, Disney saw in the fair an opportunity to find a corporate sponsor for his Hall of Presidents. Retitled "One Nation Under God," in June 1961,⁷² the attraction would tell "the story of [freedom], of the Constitution of the United States, and the threats and challenges it has had to face -- from the long and difficult process of its creation and ratification -- through the drama of the Lincoln-Douglas debates and the Civil War itself -- and finally, as a nation United, with a Constitution that survived even the most fiery ordeal, 'One Nation Under God' is the history of the challenges and promise of America Today and America Tomorrow." With such a broad thematic range, so too would the presentation be broad. using not only Audio-Animatronics but also Circarama projection, audience members would be "seated in a theatre" with "five separate screens [encircling] the viewer on three sides, a domed ceiling-sky for additional projection, stereophonic sound, a theatrical musical score -- and even the proper smell effects!" At specific moments, such as during the Civil War scenes, "the audience itself will seem to be 'on stage' — literally surrounded by dramatic sight and reverberating sound. ... guns firing on one side of the theater only to explode "an instant later...on the opposite side. And as the sound of rifle's crackling, horses neighing and bugles blaring reverberates over-head and all around you, the actual smell of gunpowder fills the theatre air." The Space Age, too, would feature prominently, "with rockets and satellites racing overhead across the domed ceiling-sky," only to watch "the curtains across the center stage of the theatre draw aside -- revealing an empty chair -- a chair that represents the men of wisdom and prophecy that have filled this symbolic position as Presidents of the United States. Yes, 'One Nation Under God' is also the story of the American Presidents -- for it is and has been the 34 Presidents who have led us in the preservation of the principles upon which the American system of government was founded." The curtains would part, and all then-34 presidents of the United States would stand in a roll call, with the finale of Lincoln standing and beginning a monologue as the other 33 presidents turned to listen. Audio-Animatronics, "a product of the Space Age" using "the same principles and

⁶⁸ Robert Stone to Mr. Moses, July 3, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NY Fair Corporation Records, NYPL. Whitney to Robert Stone, July 10, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC. Constable, John Thornton, and Witt to Moses, July 23, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁶⁹ Richard B. Whitney to Martin Stone, 12 Jul 1962, Monorail System-Disney, W.-WED Enter. Rpt., Box 297, Series I, NYFC.

⁷⁰ Robert Moses to Robert Stone, June 12, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁷¹ Earle Andrews to Whipple, August 10, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁷² Gabler, *Walt Disney : The Triumph of the American Imagination*, 652.

equipment” found in “satellites, rockets and missiles” would make these presidents all become lifelike.⁷³

General Electric politely declined sponsorship. Disney met similar disinterest from Ford representatives when they visited Disneyland in the summer of 1960 to discuss how WED might design an attraction on behalf of Ford for the upcoming New York World’s Fair. Disney hoped that Ford would support the “Hall of Presidents” idea, but the response from Ford was not enthusiastic.⁷⁴ Instead, WED agreed to “explore...other ideas...at no cost to Ford,” resulting in a new project, “Symphony of America.” In October 1960, WED traveled to Dearborn to present “preliminary sketches, capacity studies, etc.” for “The Symphony of America.”⁷⁵ This exhibit was to feature 160 automated Ford convertibles⁷⁶ that would carry “guests ... in style, safety and weather-controlled comfort...” Guests would experience “an unparalleled look at America with a symphonic musical score to paint a portrait of our nation...” fully “integrated with the complete story of the Ford Motor Company. Each guest will see and hear a continuity of ideas --- receiving the best total impression of the host, Ford.” At the beginning of the ride, guests passed “an animated theme mural” telling the story of transportation in the United States, highlighting the role of Ford’s Model T, which “literally freed [Americans] from farm and city isolation.” After getting into their Continental, guests would travel through a transparent tube (which served a second purpose of putting the Continental and its passengers on display to passers-by outside the Ford Pavilion) through a waterfall. Ford himself (speaking to the riders in their own language if not English) would narrate the story taking up where the mural left off, introducing riders to Ford’s engineering facilities and proving grounds, and it’s “spooks” or prototype cars including “an airborne Levacar.”⁷⁷

But WED’s objective was to have Ford sponsor an exhibit at Disneyland, engineered and constructed by WED; Disney wanted Ford to sponsor “One Nation Under God” because it was the capstone of his planned Liberty Square at Disneyland, something that “Symphony of America” was unsuited.⁷⁸ Disney wanted Ford not only to sign not only for the architectural fee work involved in creating their respective exhibits, but also to become sponsors of attractions at Disneyland under a lease agreement. Yet Ford balked at the sum of both the architectural retainer fees and the lessee commitment. WED’s negotiators did not know how to move forward, and in mid-May 1961, negotiations stalled. Disney himself asked Price to give his advice. In his reply to Disney, Price concluded that WED’s “position is consistent” with what was found among other design and architectural firms. On the matter of the name licensing and Disneyland leases, Price found that, in light of existing leases, the \$200,000 per year proposal for Ford and G.E. was well above what was presently at Disneyland, where the highest lessee was American Telephone & Telegraph at \$84,000 per year. Price recommended that WED’s counter-offer with Ford be a 5-year participation at Disneyland of \$500,000 per year, with an alternative of \$200k as retainer

⁷³ Economics Research Associates, “One Nation Under God: A Major Attraction for the 1965-1965 [sic] New York World's Fair.” [22 June 1962], 2-7. VII. Disney -- New York World's Fair -- “One Nation Under God” (Hall of Presidents) -- Presentation Material. 1962. Box 83. Series 7: Project Research Materials, 1957-2004 [unprocessed]. HAP.

⁷⁴ Gabler, *Walt Disney: The Triumph of the American Imagination*, 649.

⁷⁵ Draft of Proposed Letter to Ford Motor Company, Prepared May 22, 1961, Disney -- New York World's Fair -- Ford Motor Company, 1961, Box 83, Series VII, HAP.

⁷⁶ Gabler 650. WED Enterprises, “The Ford Motor Co. Presents Walt Disney’s Symphony of America,” 5, April 27, 1961, WED Enterprises, Disney -- New York World's Fair -- Ford Motor Company, 1961, Box 83, Series VII, HAP.

⁷⁷ WED Enterprises, “The Ford Motor Co. Presents Walt Disney’s Symphony of America,” 4-9, April 27, 1961, WED Enterprises, Disney -- New York World's Fair -- Ford Motor Company, 1961, Box 83, Series VII, HAP.

⁷⁸ Draft of Proposed Letter to Ford Motor Company, Prepared May 22, 1961, Disney -- New York World's Fair -- Ford Motor Company, 1961, Box 83, Series VII, HAP.

and already presented. “Such an alternative would be designed to induce commitment in the park inasmuch as the client should readily understand that the monies so spent, although greater in total [than separate retainer fees and lease rents], represent far greater value to him.”⁷⁹

Price also drafted a letter to Mott Heath of Ford on behalf of WED. In the letter, he noted that the original meeting between Henry Ford and Disney executives in July 1960 regarding Disney designing an exhibit for Ford was “predicated on the assumption that the attraction would be installed in Disneyland at the close of the Fair.” Yet while the “present show concept ... is acceptable for Fair use,” it did “not appear to be appropriate for installation [after the Fair] at Disneyland.” Price went on to explain the value of the Walt Disney name, which lied “in [Walt’s] personal world-wide fame, his vast experience in producing features and themes that have wide public acceptance, his know-how, and utilization of ideas, such as audio-animatronics [sic], that have been developed by Disney by a considerable investment of research and development work.” Therefore, combining both “the Ford and Disney names” at both the Fair as well as the Park “will have undoubted attraction value...and the two companies would mutually benefit from this association.” Price emphasized that Disney was mainly interested in Ford’s later participation at Disneyland. To this end, Price discussed only the 2.5 percent labor cost, which he noted was “nominal and competitive” among design firms. No details were given as to the “[r]search and development” funds that would be needed “to find the proper show medium for Ford’s use at Disneyland;” and should negotiations break down regarding Ford’s Disneyland participation, then they would be charged, in addition to the design fees, a flat rate of \$1 million to account for “a name use fee” to attach Walt Disney’s name to the Fair exhibit⁸⁰

Yet Disney still hoped to find another sponsor who would agree to sponsor the Hall of Presidents.⁸¹ Disney renamed the project “One Nation Under God” and presented it before executives from several corporations, including Union Carbide and Coca-Cola.⁸² Like the Monorail, Disney no doubt realized a WED-designed attraction, funded by a third party, and later installed at Disneyland, would ensuring not only experience but also long-term revenue to his cherished engineering firm. WED had tried several times over the course of 1961 to get Moses behind the project, but discussions about the attraction in New York failed to get fair executives truly excited about the idea.⁸³ A presentation before Moses and heads of Coca-Cola, Colgate-Palmolive, Union Carbide, and Hallmark in June 1961 at the RCA Victor theater in New York “impressed” Moses,⁸⁴ but seems to have done little more than inspire Coca-Cola to visit WED later that month.⁸⁵ The effort to find a sponsor for “One Nation Under God” received a shot in the arm in April 1962, when Robert Moses visited Disneyland and WED’s offices on a trip to southern California. During that trip, Disney demonstrated the robotic Abraham Lincoln in a room at the WED building for Moses. There, as Disney biographer Neal Gabler recounts,

⁷⁹ Harrison A. Price to Walt Disney, May 19, 1961, Disney -- New York World's Fair -- New York World's Fair Projects. May 19, 1961, Series VII, HAP.

⁸⁰ Draft letter to Mr. Mott Heath, [May 1961], Disney -- New York World's Fair -- Ford Motor Company, 1961, Box 83, Series VII, HAP.

⁸¹ Gabler, *Walt Disney : The Triumph of the American Imagination*, 637, 649, 654.

⁸² *Ibid.*, 652.

⁸³ Jack C. Sayers to Stuart Constable, July 25, 1961, P1.6, Disney Walt (1960-1964), Amusements, Participation, Box 316, Series I. General Files, NYFC. Robert Moses to Judge Rosenman, August 17, 1961, P1.6, Disney Walt (1960-1964), Amusements, Participation, Box 316, Series I. General Files, NYFC.

⁸⁴ Gabler, *Walt Disney : The Triumph of the American Imagination*, 652.

⁸⁵ Buzz Price to Card Walker, Ed Ettinger, Jack Sayres, Dick Irvine, Bill Cottrell, Roy Disney, Dick Pfahler, Vince Jeffers, June 29, 1962, VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents) -- Brochure Draft No. 2. June 29, 1962, Box 83, Series VII, HAP.

“Lincoln extended his hand, and Moses was instantly captivated. He insisted that he had to have Lincoln at the fair. When Walt protested that the project was five years from completion, Moses waived him off. He was determined to have his Lincoln.”⁸⁶ Moses asked Disney to put together some proposals which WED and the Fair Corporation could shop before industrial exhibitors seeking to have a presence at the fair. Price’s ERA immediately went to work on this task to, as Price put it, help “spur Mr. Moses along in this constructive effort.”⁸⁷

The chief problem for Price and his staff at ERA was to then demonstrate that such an expansive, extravagant, and technologically un-proven attraction⁸⁸ would not only be affordable but also a sound investment for a potential sponsor. Price knew that Marlett’s analysis (Figure 4.7) would be used during pitches before prospective clients,⁸⁹ and as such the numbers involved did not need to reflect what would be, but rather what could be. One short-lived approach to this, in response to Coca-Cola’s suggestion that they may be able to partly fund the attraction,⁹⁰ was underwriting the attraction under the sponsorship of one, two, or more institutions. The expansive “scope of this attraction” meant that “concerns in entirely unrelated fields of endeavor can share this sponsorship without any diminution of purpose.”⁹¹ The report also emphasized that the attraction could be easily moved to another permanent location at the conclusion of the fair. Ideally, Disney hoped, this would be Disneyland, but other locations were mentioned in the event of multiple sponsorship.⁹²

Price and Marlett further attempted to demonstrate that “[One Nation Under God] is capable of serving a very high percentage” of the anticipated fair attendance. Hourly, daily, seasonal, and total capacities for both years of the two season fair were developed. With a single theater configuration, the ERA report suggested, 20,000,000 individuals out of the projected 70,000,000 total attendance would see the show. “Considering that the scheduling and crowd control of theater shows with a relatively long cycle is conducive to achieving high utilization of design capacity, this attraction should achieve an extremely high penetration in the available audience -- as high as the largest attractions in the fair.”⁹³ Physically, the requirements would be on the high-end as far as exhibitor spaces at the fair went. Price estimated a multi-sponsor complex with two Circarama theaters and adequate “crowd gathering area[s]” would take “1 and

⁸⁶ Gabler, *Walt Disney : The Triumph of the American Imagination*, 654.

⁸⁷ Harrison A. Price to Bill Cottrell, May 1, 1962, VII. Disney -- New York World's Fair. 1960-1963, Box 83, Series VII, HAP.

⁸⁸ Much like the U.S. military projects from which some of the underlying technology for Audio-Animatronics was drawn, the robotic Lincoln was plagued with malfunctions - as late as April 30, 1964, mere weeks before the fair’s opening, the robotics still did not reliably work. See Gabler, *Walt Disney : The Triumph of the American Imagination*, 669-670.

⁸⁹ Buzz Price to Card Walker, Ed Ettinger, Jack Sayres, Don Tatum, Bill Cottrell, Roy Disney, Dick Pfahler, Larry Tyron, June 22, 1962, VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents) -- Brochure Draft, June 22, 1962, HAP.

⁹⁰ Robert Stone to Robert Moses, June 21, 1962, Monorail System - Disney, Walt Transportation, PARTICIPATION, Box 297, Series I. General Files, NYFC.

⁹¹ Economics Research Associates, "'One Nation Under God:' A Major Attraction for the 1965-1965 [sic] New York World's Fair." [22 June 1962], 19. Folder: VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents) -- Presentation Material. 1962. Box 83. Series 7: Project Research Materials, 1957-2004 [unprocessed], HAP.

⁹² “A special report on production schedules, costs, leasing terms, capacity, sponsorship plans, post world’s fair usage, area layout possibilities and other economic and audience studies,” [June 1962], Disney -- New York World's Fair -- “One Nation Under God” (Hall of Presidents). 1962, Box 83, Series VII, HAP.

⁹³ Economics Research Associates, "'One Nation Under God:' A Major Attraction for the 1965-1965 [sic] New York World's Fair." [22 June 1962], 8-9. Folder: VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents) -- Presentation Material. 1962. Box 83. Series 7: Project Research Materials, 1957-2004 [unprocessed], HAP.

2 acres, depending on the particular plans of the sponsor.”⁹⁴ Robert Stone of the fair’s Industrial Section insured more than a few plots of adequate size (and location) would be available.⁹⁵

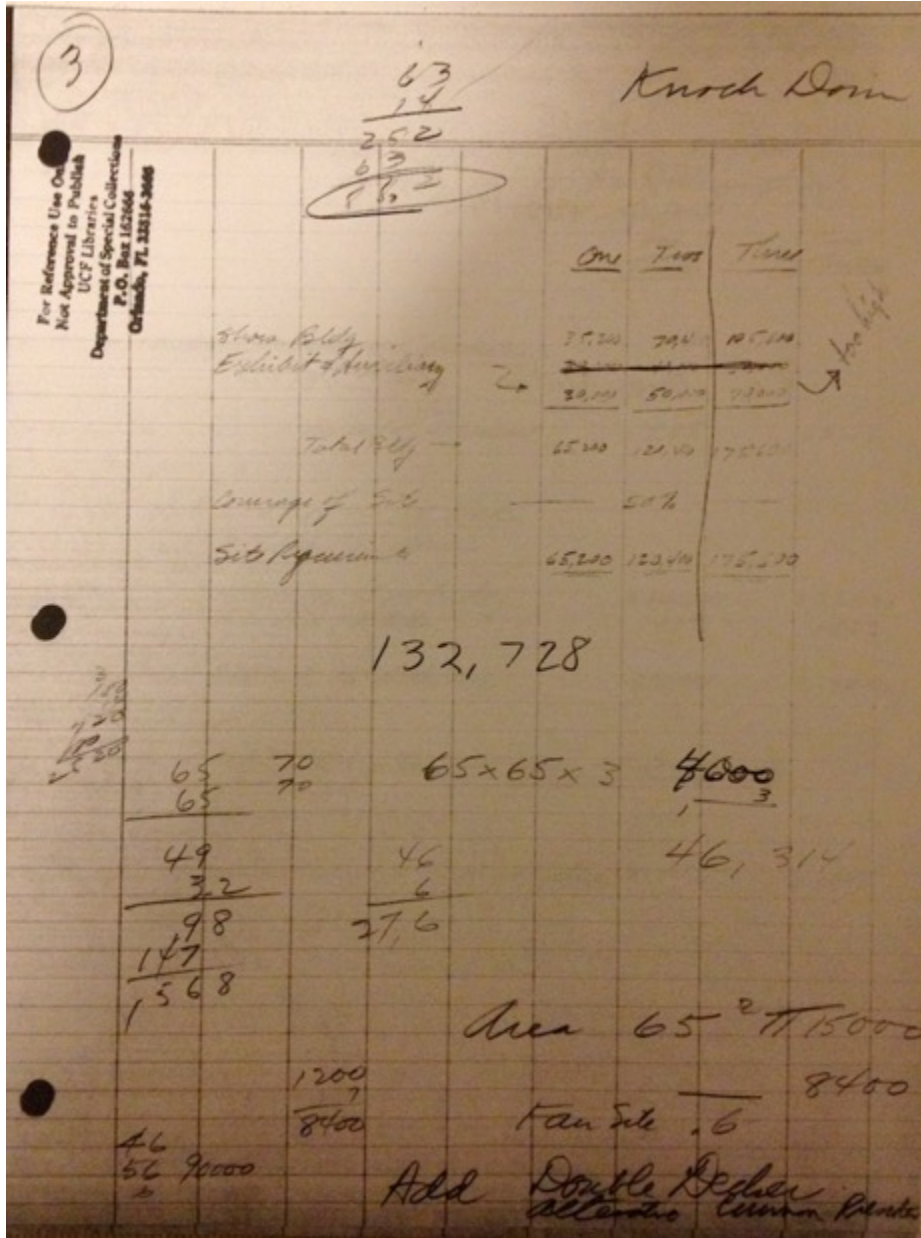


Figure 4.7. Neal Marlett’s working notes for “One Nation Under God” to analyze a two or three theater configuration would be optimal for multiple sponsorship of the attraction. Source: VII. Disney -- New York World's Fair. 1960-1963, Box 15, Series VII, Harrison A. Price Papers, University of Central Florida Special Collections.

⁹⁴ Economics Research Associates, "One Nation Under God: A Major Attraction for the 1965-1965 [sic] New York World's Fair." [June 22, 1962], 10-11. Folder: VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents) -- Presentation Material. 1962. Box 83. Series 7: Project Research Materials, 1957-2004 [unprocessed], HAP.
⁹⁵ Jack Sayers to Dick Irvine, [June 5, 1962], VII. Disney -- New York World's Fair -- "One Nation Under God" (Hall of Presidents). 1962., Box 83, Series VII, HAP.

“One Nation Under God,” with its Circarama theaters and 34 Audio-Animatronic presidents was a hard sell, and ultimately what did end up at the fair was a much-downsized (and highly successful) Great Moments with Mr. Lincoln, sponsored by the State of Illinois. Not only did both Ford and General Electric turn the attraction down earlier, but after Moses’s April 1962 visit Coca-Cola, the National Association of Manufacturers, and American Iron and Steel all declined sponsorship.⁹⁶ solicitations with the Federal Pavilion, long viewed as an ideal sponsor among both WED and fair management, also went no-where. Over 1962 through January 1963, Moses and Roy Disney lobbied with the Department of Commerce to sponsor the exhibit, which the department ultimately rejected citing “budgetary and space problems.”⁹⁷ By October 19, in a letter to the fair’s head of construction, General William E. Potter, Moses expressed exasperation at what Disney continued to push for as “realistic financing” for the attraction.⁹⁸ The attraction too big and too unproven. When the State of Illinois finally did agree to sponsor the project (and only after what appears to have been aggressive lobbying on the part of Moses and his staff over the first half off 1963 with the deal finally completed that September),⁹⁹ it was a much reduced concept. Gone were the other 33 presidents and the Circarama projection system, the smell of gunpowder. Only the robotic Lincoln would remain, at a cost of \$600,000,¹⁰⁰ and even then the Fair Corporation had to subsidize the attraction with a loan of \$250,000 which was kept secret from Disney.¹⁰¹

⁹⁶ Martin Stone to Mr. Robert Moses, Memorandum, February 13, 1963, Box 315, P1.6, Disney Walt (1960-1964), Amusements, Participation, Series I. General Files, NYFC.

⁹⁷ George J. Rothwell, Deputy Commissioner to Roy E. Disney, September 17, 1962, New York World's Fair, IDEAS - "Hall of Presidents" Exhibit, FRC 2: Exhibits Design and Construction, National Science Foundation Thru USIA, Entry 102, Office of the Secretary, U.S. Commission New York World's Fair, Construction File, 1962-1965, RG 40 Department of Commerce, National Archives II, College Park, MD (hereafter “DOC”). Philip B. George to Commissioner Winston, January 7, 1963, New York World's Fair, IDEAS - "Hall of Presidents" Exhibit, FRC 2: Exhibits Design and Construction, National Science Foundation Thru USIA, Entry 102, Office of the Secretary, U.S. Commission New York World's Fair, Construction File, 1962-1965, DOC. Gabler, *Walt Disney : The Triumph of the American Imagination*, 652.

⁹⁸ Robert Moses to General Wm. E. Potter, Memorandum, October 19, 1962, Folder. P1.6, Disney Walt (1960-1964), Amusements, Participation, Box 315, Series I. General Files, NYFC.

⁹⁹ Martin Stone to Mr. Robert Moses, Memorandum, February 13, 1963, Box 315, P1.6, Disney Walt (1960-1964), Amusements, Participation, Series I. General Files, NY Fair Records, NYPL. Minutes of Regular Meeting, Board of Directors, September 26, 1963, 10, Board of Directors Meeting Minutes, 1963-1964, Box 548, Series V. Secretary File, NYFC.

¹⁰⁰ Gabler, *Walt Disney : The Triumph of the American Imagination*, 665..

¹⁰¹ Ibid., 654-655.. Minutes of Executive Committee, August 15, 1963, 14-15, Minutes of Executive Committee, July - Dec. 1963, Box 555, Series V. Secretary File, NYFC.

Chapter Five

Interama: failed visions of Pan-Americanism in Miami, 1952-1973

In 1950, Florida had just begun to transform from a predominantly rural, agricultural state of the American South into “an urban megastate,”¹ in a process that historian Greg Mormino has christened Florida’s Third Boom. This arose “from complex interrelated forces and factors. Breathtaking shifts in technology, rising levels of affluence, the emergence of large numbers of senior citizens and retirees, new freedoms and old customs, political and leisure revolutions, a Great Society and a Cold War, ... expressways all shaped the development of modern Florida.”² Tourism, aerospace, and defense now stood with agriculture as the state’s main industries. Florida’s population, once small, thinly distributed across the state, mostly white, and Protestant, had even by 1960 become multicultural, with immigrants from Cuba and Latin America. Floridians began employing new technologies such as air conditioning, and the pesticide DDT to pacify what could be the harsh environment of Florida. Or, perhaps closer to the truth, make it a bit more habitable for sun-seeking tourists and residents. Many who journeyed to the state came seeking Florida’s version of the American dream: a single-family home, an automobile, and a vacation in the Sunshine State.³ New airports and expressways, including I-95, began to bring in ever-increasing numbers of tourists. Florida’s business, banking, and political elite (with a healthy amount of carpet bagging speculators) looked on and saw their own opportunity in the new flood of people coming into the state. New communities catering to retirees began to appear, gradually pushing the state’s median age upward. Near the end of the decade, at the invitation of John D. MacArthur, the Disneys briefly considered a joint venture between themselves and RCA to develop a “Community of Tomorrow” on land owned by MacArthur near West Palm Beach,⁴ an indicator that tourism in the state would soon transform from the family owned, low-tech attractions such as Cypress [what is it] and Marineland into Disney World, Sea World, and Busch Gardens.⁵ suburbs and private communities sprout like toadstools, without any relationship to cities. Instead of liberating residents, the choices have pulled communities apart, or at least reconfigured them, disintegrating urban life.⁶ like Orange County in California, Orange County, Florida has also been shaped by the automobile, with “low-density...horizontal sprawl, and small urban centers” scattered across the state.⁷

But the postsuburban megastate that Florida is today was not pre-determined. There were many different possibilities imagined by Floridians and foreigners alike. Disney once contemplated a joint venture with RCA to build a “Community of Tomorrow” on land owned by John D. MacArthur in West Palm Beach.⁸ And in Miami, a group of businessmen and politicians

¹ Gary Ross Mormino, *Land of Sunshine, State of Dreams : A Social History of Modern Florida*, The Florida History and Culture Series (Gainesville: University Press of Florida, 2005), 43.

² *Ibid.*, 45.

³ *Ibid.*, 11.

⁴ Economics Research Associates, "The Economic Setting of the City of Tomorrow, Prepared for WED Enterprises," December 14, 1959, Reports -- WED Enterprises. Econ Setting of City of Tomorrow, December 14, 1959, Box 7, Series I, HAP.

⁵ Mormino, *Land of Sunshine, State of Dreams : A Social History of Modern Florida*, 32.

⁶ *Ibid.*

⁷ *Ibid.*, 19.

⁸ Economics Research Associates, "The Economic Setting of the City of Tomorrow, Prepared for WED Enterprises," December 14, 1959, Reports -- WED Enterprises. Econ Setting of City of Tomorrow, December 14, 1959, Box 7, Series I, HAP.

imagined a very unique urban development, a hybrid trade mart, city, trade, and international exposition that would rise out of the swamps at the north of Biscayne Bay (Figure 5.1). Called the Inter-American Cultural and Trade Center (or Interama), it would not only promote Miami's brand of Pan-Americanism, but also show how the city and its leadership were oriented to the future, a place for America's leading architects and planners to experiment with the cutting edge in their professions to build a city representing the future of urbanism for a Pan-American city, nation, and world.



Figure 5.1. Photo of Biscayne Bay looking south towards Miami overlaid with artist's conception of Interama site. Source: Records, 1952-1975. Inter-American Center Authority Collection, HistoryMiami, 2008-264.

While the origins of Interama lie in the city's rapid growth during the 1920s, the project got wider support and began in earnest after World War II. Much like the rest of Florida, Miami in 1950 was moving away from its role as a distant winter haven for well-to-do New Yorkers, with its grand hotels, beaches, and heady entertainment.⁹ The city, once a remote outpost, became a tourist mecca during the 1920s. Hialeah Park, Florida's first race track, opened in 1924 and quickly became an icon of Miami decadence. Allegations of organized crime contrasted with sunny beaches in a heady mix that attracted tourists. The city, once a remote outpost, became a metropolitan area in its own right with Florida's second big real estate boom in the 1920s. Neighboring Hialeah Park, Florida's first race track, opened in 1924 and quickly became an icon

⁹ Mormino, *Land of Sunshine, State of Dreams : A Social History of Modern Florida*, 25.

of Miami decadence. Allegations of organized crime contrasted with sunny beaches in a heady mix that attracted tourists. But local leaders sought to capitalize on the blessings of geography, and transform Miami into a hub city, the very expression of Pan-Americanism. The path to this, they felt, was the Inter-American Cultural and Trade Center, or Interama. a gateway city and hub, cultural and economic, for the region. It would, they hope, move their city from a resort destination of vice and beaches, grand hotels and race tracks, into the future-oriented capital of Pan-Americanism.

Miami's civic leaders sought to bring their city to national prominence, defining how their city and the state of Florida fit into the South and rest of the nation. Unlike their counterparts in Seattle ten years later, however, Miami's leaders thought on a scale and scope that would extend far beyond a traditional world's fair. Observing how air travel had created new opportunities for trade with the Caribbean and Latin America, these civic leaders hoped to rebrand Miami as a gateway and hub city of Pan-Americanism. It would be the channel through which the United States' long flirtation with the other nations of the Western Hemisphere could finally be realized as a center of economic and cultural exchange, and the articulation of international policy, with Interama the permanent facility coordinating these activities. Several presidential political projects supported Interama, including FDR's Good Neighbor policy and JFK's Alliance for Progress.¹⁰

Interama is a story about the ongoing efforts to bring together different stakeholders in this particular vision of Miami Pan-Americanism. Interama's promoters also hoped, in part, that "a statement that Miami was looking outward and to the future, and that it was vibrant, had an edge, and was aggressively international."¹¹ The former Interama site today now hosts a state park and a campus of Florida International University. Few of the area's residents recall just what it was. On a trip in January 2015, the author spoke with a park ranger at the entrance gates. He was familiar with Interama, and noted that every now and then someone will ask about it who had already known about the history. Yet there are no signs indicating the once grand plans that existed for the Graves Tract. The failure of Interama to materialize is a story of the failure of stakeholders to come together in support of a particular future vision of Miami. At different times, the interests of federal, state, and local politicians; local bankers and investors in faraway New York; and the unpredictable political shifts across many Caribbean and Latin American states; would converge and diverge. But the visions held by each never did overlap sufficiently to make the project a reality. Interama's concept drifted from one pole to another, leading to indifference and confusion among many about just what the Center was supposed to be.¹²

Founded in 1896, Miami began to come into its own in the 1920s. Aggressive marketing in New York cast the city (and much of Florida) as a winter haven. A series of misfortunes, including a hurricane in 1926, an overheated real estate market, and the Great Depression, momentarily turned the city into a humid outpost in the nation's southernmost hinterlands.¹³ As the 1930s moved on, however, the city's fortunes began to change. The advent of commercial air transportation, most visible with Pan American airways (which established air travel between Miami and Cuba in 1931), encouraged Miamians to establish and strengthen business networks

¹⁰ Gonzalez, *Designing Pan-America : U.S. Architectural Visions for the Western Hemisphere*, 154.

¹¹ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

¹² Ibid.

¹³ Melanie Shell-Weiss, *Coming to Miami : A Social History*, Sunbelt Studies (Gainesville: University Press of Florida, 2009).

linking Miami and other areas in Latin America. The city's leadership began to think not only of their city as a destination for winter-weary New Yorkers, but also as a hub and gateway of culture and trade in its own right. The idea of "a Pan-American trade mart" was first suggested in the late 1920s by Ev Sewell, three-time mayor of Miami, and was further promoted by his successor Clifford Reeder.¹⁴ and some began to agitate to establish a "hemispheric park" in the city. Despite the project's approval by the Roosevelt administration (as part of the president's "Good Neighbor" initiative), it went nowhere. Like many other projects, World War II put the park idea on hold. It was resurrected after the war by a group of 20 Floridians, who through a series of public meetings in South Florida, Jacksonville, Tallahassee, and the Tampa-St. Petersburg area" was able to gain "considerable support" of the idea throughout the state. Suggesting the still-strong links of Florida's political elites with the rest of the South,¹⁵ the project gained the support of governors in Georgia, North Carolina, and South Carolina, who became convinced that Miami's hemispheric park would benefit their states. In 1950, President Truman and a joint resolution of Congress supported the idea. A year later in July 1951, Florida Governor Fuller Warren appointed the first members Inter-American Center Authority (IACA or the Authority), and the city of Miami conferred 1700 acres of land in the north-east of Dade County that the city had previously obtained for an airport.¹⁶ Interama would be a "permanent bazaar, combining the features of an amusement park, world's fair, and trade show...."¹⁷ the 20 person organizing committee for IACA "built considerable support for the project prior to the Authority's creation, holding public hearings in South Florida, Jacksonville, Tallahassee, and the Tampa-St Petersburg area. "also governors of GA, NC, and SC also back the project "Convinced of the potential economic benefit for their states...." US Senator Spessard Holland lobbies in DC "the role that a hemispheric center could play in strengthening U.S. ties with Latin America."¹⁸

Despite hiring a New York architect in February 1950, Hugh Ferriss in February 1950,¹⁹ Interama was still very much a South Florida endeavor during its early years. The Authority hoped to obtain a loan from the Reconstruction Finance Corporation, a Depression-era federal agency that was first formed by President Hoover. But RFC loan bogged down due to Senate investigations into RC itself. Then in Nov 1952, Republicans take over Congress and White House and dissolve the RFC.²⁰ (Hoover 449) Accusations against the RFC of cronyism, however, led to Congress disbanding the RFC. The disbanding of the RFC meant that the Authority had to scrap their financing plans.²¹ In place of a loan, then, they turned to debt financing by selling bonds to private investors. Such a scheme was unprecedented at the time for "a project of world fair proportions...."²² It was also a fateful decision that doomed the first vision of Interama as a hemispheric park celebrating Miami's idea of Pan-Americanism.

¹⁴ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

¹⁵ Charlton W. Tebeau, *A History of Florida* (Coral Gables, Fla.: University of Miami Press, 1971).

¹⁶ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama.", Gonzalez, *Designing Pan-America : U.S. Architectural Visions for the Western Hemisphere*.

¹⁷ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

¹⁸ Ibid.

¹⁹ Gonzalez, *Designing Pan-America : U.S. Architectural Visions for the Western Hemisphere*, 159.

²⁰ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

²¹ SRI's directors also sought to finance their Institute after its founding through an RFC loan. In that instance, the Institute was forced to pursue other avenues of funding and would consequently have significant impact upon the Institute's research activities. See Chapter 1.

²² Ebasco Services Incorporated, "Report on Proposed Inter-American Cultural and Trade Center, Miami, Florida," February 1956, 8, Box 3-1, Interama Records, 1952-1975, HistoryMiami Archives (hereafter "HMA")

To handle the bond sale, the Authority's directors turned to New York capital, a combination of the investment firm Lehman Brothers and research firm Ebasco Services. The arrangement was straightforward enough: Lehman would market a \$70 million bond issue that would be used to build, plan, and initial funding to operate the Center.²³ Ebasco, as "Consulting Engineers," would estimate Interama's attendance, revenue, and expenses. The firm would also "assist, advise, check, control, report on and exercise independent judgment with respect to matters concerning the planning, establishment, construction, repair and maintenance, budgeting, and operation of the Center"²⁴ - yet it would not solicit prospective participants, "the sale of attractions," or promote Interama "in any way."²⁵ The bonds themselves would be secured by Interama's revenue agreements with concessionaires and other exhibitors. Should the Authority fail to sign sufficient agreements with prospective participants that would ensure Interama's success (as determined by Ebasco), then a portion of the bonds would be protected by leasing "all or any part of the Graves Tract as then improved."²⁶ Although it may not have appeared as such, Ebasco's engineers held an undue amount of sway over which direction the project would move, and their failure to understand Interama's concept as imagined by the Miami group would have profound implications.

But the switch to private debt financing also meant a loss of local control over Interama's concept. Ebasco's engineers struggled to understand just what their Miami colleagues had in mind. The notion of a permanent exposition had no precedents.²⁷ All expositions had been temporary affairs, lasting at most as much as two seasons. Lehman and Ebasco turned to a familiar analogue, the world's fair, as the lens through which they attempted to understand and market Interama. This fundamental shift in perspective needed to gain confidence in the attraction's future also impacted Interama's physical design. Instead of forging a new concept for the Center, a team of Miami architects led by Hugh Ferriss, himself a New York architect, produced designs which more resembled a typical "American-themed world's fair" rather than one with a strong Pan-American concept.²⁸ Many aspects of Ferriss' design borrowed directly from the 1939-1940 New York World's Fair,²⁹ and Interama's connections to Pan-Americanism and Miami were instead expressed through abstraction.³⁰ Ferriss may have also been encouraged by his New York financial and engineering colleagues at Lehman and Ebasco to move more in a direction which they were familiar with. As architectural historian Robert González notes, the final concept developed by the Ferriss team in 1956 "Ferriss understood the complexities of interhemispheric diplomacy, but his final designs were caught up in this wintry/balmy dichotomy."³¹ A failure of imagination on the part of Ebasco to understand Interama in its own

²³ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

²⁴ Ebasco Services Incorporated, "Report on Proposed Inter-American Cultural and Trade Center, Miami, Florida," February 1956, V1-V3, Box 3-1, Interama Records, 1952-1975, HMA.

²⁵ Ebasco Services Incorporated, "Report on Proposed Inter-American Cultural and Trade Center, Miami, Florida," February 1956, V1, Box 3-1, Interama Records, 1952-1975, HMA.

²⁶ Ebasco Services Incorporated, "Report on Proposed Inter-American Cultural and Trade Center, Miami, Florida," February 1956, 7-9, Box 3-1, Interama Records, 1952-1975, HMA.

²⁷ In a presentation before planners of the proposed Seattle fair in November 1957, Stanford Research Institute cited both Interama and Disneyland as an example of a trend towards "permanent attractions," and recommended "that serious effort should be made to develop an entirely new concept and approach for the Washington State Fair." See Joint Meeting of Design Standards Advisory Board, World Fair Commission, and Civic Center Advisory Commission Minutes, November 11, 1957, World's Fair Commission Minutes, 1957, Box 1, Series 1. Minutes and Reports of the World Fair Commission, 1955-1963, Subgroup I. World Fair Commission, C21.

²⁸ González, *Designing Pan-America: U.S. Architectural Visions for the Western Hemisphere*, 160.

²⁹ *Ibid.*, 161.

³⁰ *Ibid.*

³¹ *Ibid.*, 160.

terms contributed to this, reducing Miami's vision to a simple contrast between New York and Miami, laid over a design that borrowed from the last domestic fair, itself held in New York.

Despite much enthusiasm at a January 1956 press conference, in which Authority representatives used Ebasco's estimates to confidently describe the center's future success, Lehman was unable to sell the bonds. Many investors, noting that the recently-opened Disneyland had greatly exceeded its construction budgets and was in a "precarious" financial situation, shied away from Interama. The president of Pan-American Airways remarked that many investors also questioned Interama's estimated 17.5 million annual attendance, and the activity the Center was expected to create.³² Investors also felt uncertain about the very bonds they were expected to buy which would finance Interama. Secured by promised revenue and with no real estate to protect them (other than lease agreements to the land), the bonds were not an attractive proposition.

No sooner did Lehman abandon its marketing of Interama bonds than did the Authority's board begin investigating what went wrong. Authority chairman William C. Lantaff noted that "[a] dominant factor" in the failure of both the RFC and bond financing schemes was "inadequate security provided to bondholders...." As the Trust Indenture for the bond issue outlined, should Interama fail to materialize, investors' bonds would be protected by promised ninety-nine leases against the Graves Tract. For many investors, the Authority believed, this was insufficient security to risk purchasing the Interama bonds.³³ Lantaff noted that since the failed Lehman sale, the city of Miami (who owned the Graves Tract) had given the Authority deed to the land, "a favorable factor to insure future financing."³⁴ This resolved the problem of insufficient security. The Authority turned to another firm, Goodbody & Co. of New York, to market a new bond issue. A similar arrangement ensued, again with an outside authority (now called a "management consultant" in the new Trust Indenture) still acting as an independent evaluator of the Authority's plans.

This time, however, the management consultant would also have veto authority over any proposed bond sale. The Authority included this veto power as a safety measure. If in any proposed plans for developing Interama, the management consultant deemed it would not be feasible, the bonds would not go on the market. Thus, the public land would remain in public hands. It was, in essence, a kind of insurance. It would also strain the responsibilities of the management consultant and shape the work they did. The Authority at first selected Arthur D. Little, Inc. (ADL), of Cambridge, Massachusetts, to be the management consultant. Under the guidance of H. Donald Wilson, the firm's New York office had developed a small expertise in expositions (although it had not yet done any major projects, as both SRI and ERA had by this time). Wilson had co-sponsored two studies of both Disneyland and Century 21, and hoped that Moses's Fair Corporation would provide a test bed to further expand ADL services into expositions.³⁵ Although the Fair Corporation turned down Wilson's proposal, this did help bring

³² Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

³³ Interestingly enough, the 1964-1965 New York World's Fair was financed using a similar scheme: the Fair Corporation would build and operate the fair, financed by bonds secured through the anticipated revenue based upon attendance estimates certified by Madigan-Hyland. The City of New York leased Flushing Meadows to the Fair Corporation for \$1, but did not convey the deed nor give the Fair Corporation rights to use it as security.

³⁴ Inter-American Center Authority, Minutes, Informal Meeting, November 8, 1960, S 470, Minutes, RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives (hereafter "IAR")

³⁵ See Chapter 3 of this dissertation.

Wilson into contact with the Authority. ADL's expertise in operations research, its developing expertise in expositions work, and the similarity technical backgrounds of members of the Authority's research staff (one associate used systems analysis to achieve "a proper balance between costs, speed, reliability, and availability" in the Center's transportation system),³⁶ all helped lead both ADL, Goodbody, and Interama together.

There was a second, bigger problem: early in the investigation, the Authority's board realized that "Interama meant different things to different people." They lacked a "single, well-defined concept" for the Center, with ideas about what it was including "a \$70,000,000 Spectacular to a low-cost trade fair."³⁷ The directors realized that Lehman Brothers had little understanding of what Miamians intended as "the purpose of the Inter-American Cultural and Trade Center...the project became another World's Fair whose basic objective was revenue production The transitory characteristics and requirements of World's Fairs were applied to a permanent and ever growing Inter-American Center."³⁸ In other words, the Authority's directors faced the same problems that Disney faced finding support for Disneyland. But unlike Disney, the Authority lacked an outside firm which had the capability to understand what the project was. The selection of both ADL and ERA reflected this realization, as both firms were either developing a practice in expositions or already had experience in them.

The solution to the concept problem was a detailed and intensive in-house research effort that would carefully define what Interama would be. The completion of this research project would also precede any future architectural or financial work. Thus, the Authority hoped, they could avoid a repeat of their first attempt, where the Center's concept slowly drifted towards just another world's fair. To accomplish this work, the Authority hired an expert from the expositions industry, Paul Massmann, as a senior consultant. Around the same time, Irving Muskat, a Professor of [Chemistry] at [the University of Miami], also joined the Authority board. Muskat also had previous experience, having managed the Hall of Science at Chicago's 1933 "Century of Progress."³⁹ and would soon become its chairman.⁴⁰ The pair's work was centered first on defining what world's fairs were, including aspects of their "obsolete" nature. The traditional divisions of an exposition into various areas "according to product or service is a reliquary of the obsolete cycle of World's Fairs ending in the early 20th Century," Massmann wrote. Prizes and awards dictated this grouping, necessitating that similar exhibits be proximal to one another. Massmann especially used the 1939-1940 New York World's Fair as an example of how not to proceed. That event's reliance upon the "obsolete" world's fair type inevitably led to its financial failure, Massmann argued. There was no need for Chrysler, Ford, and GM to be neighbors, grouped together with railroads and Eastern Airlines in a Transportation area.⁴¹ Interama's themes were also carefully outlined. This work was particularly important, since the Authority hoped to gain federal support of the Center through aligning their objectives with those of

³⁶ "Systems Analysis," Transportation Notebook, Box 28, S 483, Project development files, IAR.

³⁷ "The Inter-American Center," May 20, 1958, Folder. Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA.

³⁸ Section I, Inter-American Cultural and Trade Center, Appraisal of Present Status, Recommendations of Progressive Activity, March 22, 1957, 1, Interama-Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA.

³⁹ Gonzalez, *Designing Pan-America : U.S. Architectural Visions for the Western Hemisphere*, 165.

⁴⁰ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁴¹ Paul M. Massmann to Irving E. Muskat, May 2, 1960, Interama - Conference Summary and proposed plans, 1960, Interama Records, 1952-1975, HMA. "An Approach...", [July 1960], 1, Interama, July 1960, Box 4-2, Interama Records, 1952-1975, HMA.

Kennedy's Alliance for Progress.⁴² It was a direct assault against Lehman's bankers, Ebasco's engineers, and Hugh Ferriss who had enthusiastically looked to the 1939 fair for inspiration, despite its ultimate failure.

For all the pair sought to distance Interama from the world's fair type through their descriptive work, those aspects of their work requiring quantitative data relied upon the records of earlier fairs. For example, attendance estimates were still based in part upon the experience of the 1939 New York and San Francisco Fairs. Estimates for car capacities were too based in part on the Chicago Century of Progress.⁴³ Similar to ERA's Planning Manual for Century 21, Massmann also developed land use estimates. Much like Moses's Fair Corporation, handling the anticipated 50,000 visitors per day was on the minds of Muskat's team. They not only developed an "Admission Center" to handle multiple functions (Figures 1 and 2) but also carefully developed a notional transportation system for the fair (Figures 3, 4, and 5). They took a systems analysis approach to the transportation problem.⁴⁴

Massmann and Muskat's work paid off handsomely. Miami architect Robert Bradford Browne, hired by the Authority in February 1960, assembled an all-star cast of architects in 1965: .⁴⁵ The group was able to immediately grasp the innovative character of what Miami's Interama was to be, as well as have an abundance of numbers with which they could have confidence that their designs would be able to meet the anticipated needs of the Center. As Marcel Breuer commented, it was a lifetime opportunity to explore how the methods and techniques of modernism could be used to solve contemporary issues in urban design. Browne's team gave form to what Muskat and Massmann envisioned for the Center. It would be a miniature city, a place where the "ideal Inter-American" would come to be. Latin Americans would live on the fairgrounds as a kind of "Peace Corps in Reverse." With university scholarships and opportunities for experience assembling American goods (including the automobile), they would return to their native countries as true "Pan-Americans."⁴⁶ The design emphasized "communal structures, outdoor spaces, and garden areas" with "national components of the buildings [receding] into the background." A C-shaped layout with floating, wedge-shaped peninsulas, pointed towards "a centrally located tower and island." There, Yamasaki's "Tower of Freedom" would be the centerpiece of the Center, tying together its various pieces.⁴⁷ Symbolizing the "three Americas," the tower had three separate supports.⁴⁸ The architects saw the Center as a place where they could experiment with "alternate dwelling systems and models

⁴² Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama." "Panorama of Man's Search for Freedom," Interama - Conference Summary and proposed plans, 1960; "Interama and Freedom," Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA. "Why Interama?," Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA.

⁴³ Paul Massmann to Irving E. Muskat, May 10, 1960, Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA.

⁴⁴ Interama Plan #1, n.d., Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA. Paul M. Massmann to Paul C. Watt, May 10, 1960, Interama - Conference Summary and proposed plans, 1960, Box 4-1, Interama Records, 1952-1975, HMA. Memorandum Report No. 4, SRI Project No. I-2321, Prepared for: Washington State World Fair Commission, Seattle, Washington, Stanford Research Institute, April 1958, 37, Folder. ECD - Personal, Project Development, SRI (4 sections complete), Box 9, Accession 0420-001, ECD. Transportation Economics, Box 28, S 483, Project development files, IAR. "Intramural Transportation," Miscellaneous Transportation, Box 28, S 483, Project development files, IAR.

⁴⁵ Gonzalez, *Designing Pan-America : U.S. Architectural Visions for the Western Hemisphere*, 152.

⁴⁶ *Ibid.*, 165.

⁴⁷ *Ibid.*, 167.

⁴⁸ *Ibid.*, 176.

of city design,” which at the time were central questions facing the architectural profession. Marcel Breuer once commented that Interama could be “a turning point” for the profession.⁴⁹

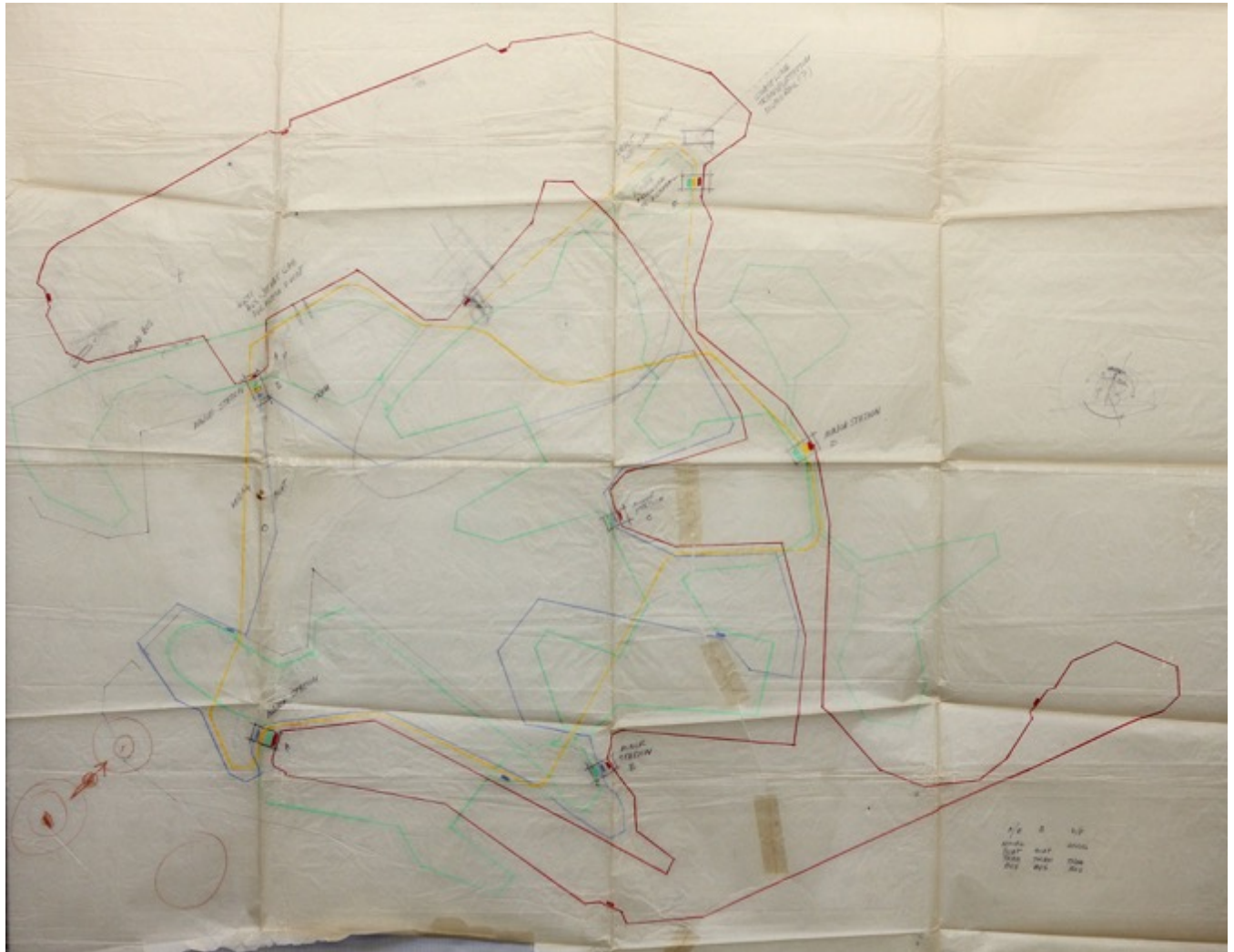


Figure 5.2. Tissue paper overlay used by Interama’s planners to understand how visitors would flow through the Center’s grounds. Planners would place it over a map of the Center’s site. Source: Internal Transportation – Routing, Box 28, S 483, Project development files, RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives.

⁴⁹ Ibid., 155.

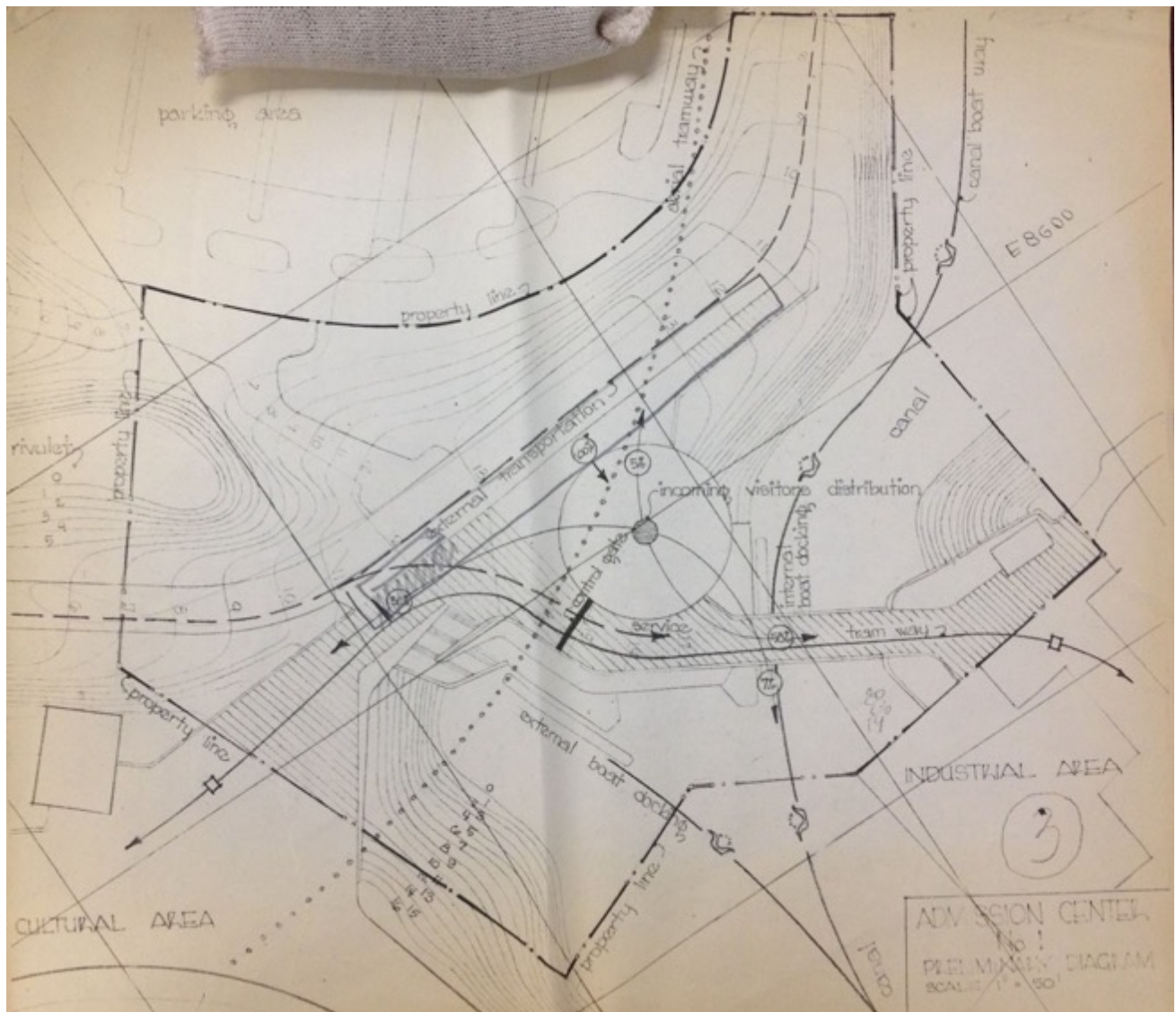


Figure 5.3. Drawing of Admission Center No. 1. Note directional arrows indicating visitor flow through the center. Source: "Admission Center No. 1 Preliminary Diagram," Box 28, S 483, Project development files, RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives.

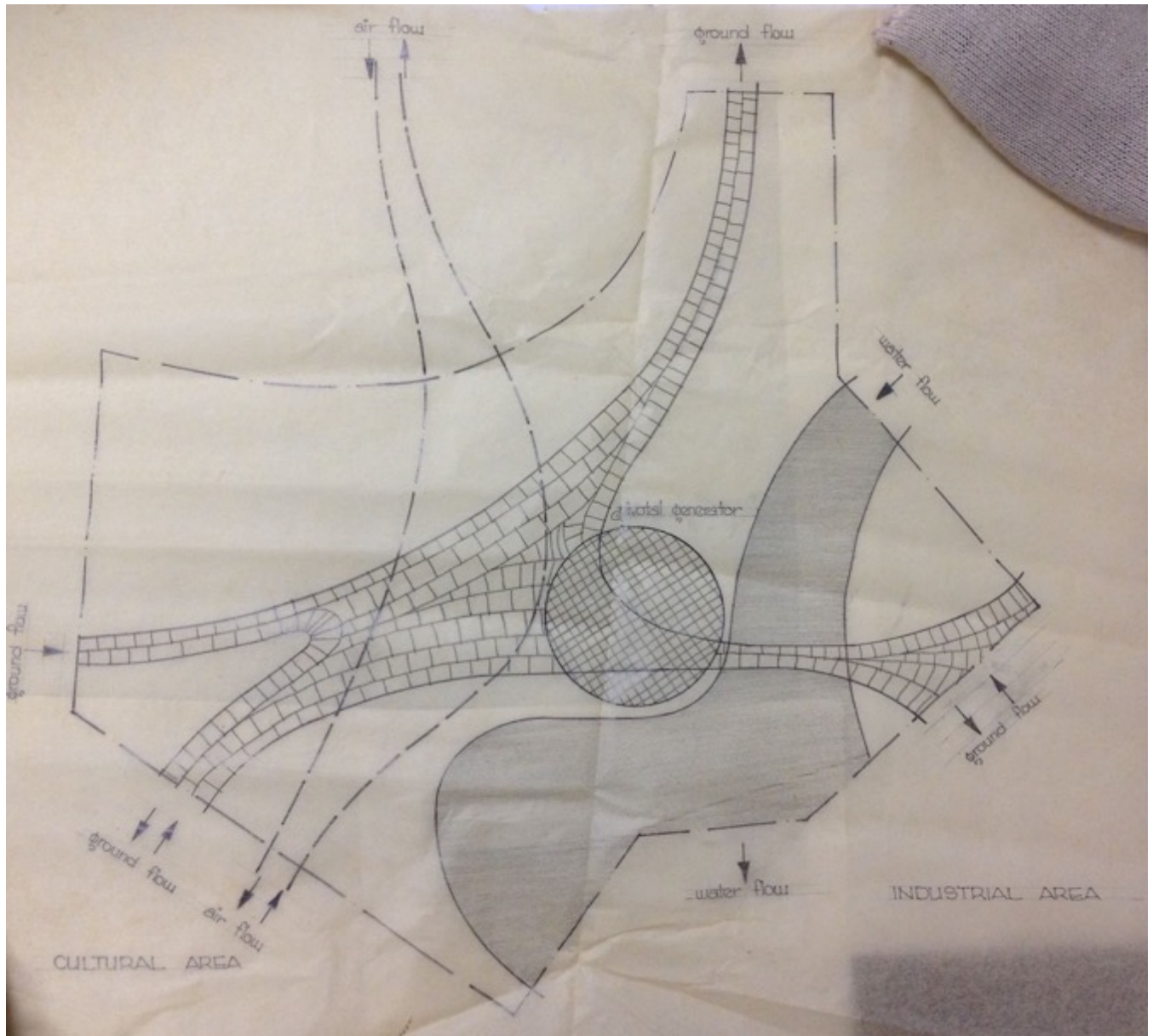


Figure 5.4. Overlay for Admission Center No. 1, indicating visitor flow (“ground flow”), water, and air movement through the center. Source: Source: Box 28, S 483, Project development files, RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives.

<u>ADMISSION CENTER NO. 1</u>		100,000	75,000
<u>Site Location:</u> South side of International Area		100,000	75,000
<u>Quantities</u>		<u>Persons Day</u>	<u>Persons Day</u>
A. Visitors			
1.	Entering	33	33
	a. Average hour	1037	777
	b. Peak hour	2059	1540
2.	Leaving	54	50
	a. Peak hour	3003	2280
	b. Maximum peak hour	5673	4260
B. Autos			
1.	Entering	8	8
	a. Average hour	11	8
	b. Peak hour	45	34
2.	Leaving	9	7
	a. Peak hour	58	43
	b. Maximum peak hour	120	90
C. Buses			
1.	Entering		
	a. Average hour	19	14
	b. Peak hour	34	25
2.	Leaving		
	a. Peak hour	60	45
	b. Maximum peak hour	103	77

Figure 5.5. Statistics derived from Interama attendance estimates used in planning Admission Center No. 1 (Figures 5.3 and 5.4). Source: "Admission Center No.1," Box 28, S 483, Project development files, RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives.

While Muskat's research did much to guide Browne's architectural team towards a design that truly represented notions of cultural exchange and presented a "sophisticated way of framing a new Pan-America,"⁵⁰ many of the directors no doubt realized that much of that research could be challenged on the basis that it was done in-house. This was especially problematic with the Authority's lobbying effort to gain federal support of the project. Although Interama had a long line of presidential (and even at one time congressional) support stretching back to FDR, there was much resistance not only within Congress but also various federal departments to disbursing federal funds in support of a project whose primary beneficiary was the city of Miami.⁵¹ The Authority had turned to other firms on an ad-hoc basis to provide information that would be better created by an outside firm than in house. One of these was Miami's First Research Corporation, which provided an estimate on how many additional tourists Interama could be expected to bring to South Florida.⁵² At some point, perhaps at the

⁵⁰ Ibid., 177.

⁵¹ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁵² "Interama - A Presentation of its Concept, Financing and Potential Role as an Instrument of United States National and Foreign Policy," Box 4-2, Interama Records, 1952-1975, HMA.

recommendation of Wilson, the Authority contracted with ERA to do a study of []. In April 1965, ERA had officially replaced ADL as the management consultant mandated by the bond Trust Indenture. Muskat cited ERA's "broad experience" across a "wide range" of industries, as well as its successful track record in "recreational economics." ERA's "specialized experience" in "fairs, expositions and exhibitions" including "Disneyland, the Seattle World's Fair, the California State Fair, and the forthcoming ... Expo '67" were all additionally cited as reasons. Having the approval of Arthur D. Little also helped.⁵³

This couldn't have come at a more opportune moment. The Authority had been facing an uphill battle getting the federal government to approve a loan from the Community Facilities Administration (CFA).⁵⁴ Feasibility studies from the Commerce and State Departments were at odds about what the benefits of Interama would be exactly.⁵⁵ In response, Florida Senators and House members Speared Holland, George Smathers, Claude Pepper and Dante Fascell embarked on "an intense lobbying effort" which resulted in the CFA authorizing a \$22 million loan in early 1965, contingent upon United States participation in the project in the form of a pavilion.⁵⁶ The stage was thus set for a showdown in Congress, where an ERA vice president, Herbert Holly, along with 15 pounds of reports, studies, and other research assembled by Muskat, took center stage.

The drama unfolded on August 26, 1965. After opening statements (either in person, as with Muskat who went over the "study, analysis, and planning" done by the Authority since Lehman had failed to sufficiently sell the first bond issue, as well as the all-star cast of architects) or as exhibits (George Moore, despite the financial disaster that the fair in New York had become under his watch, submitted a statement in support of Interama),⁵⁷ ERA's Holly was asked to testify on the "economic" aspects of Interama. Senator Fascell of Florida first questioned Holly, asking him how long it will take Interama to pay back both the CFA and trust bonds. Holly then was asked questions directly related to the net income of the project, projected attendance.⁵⁸ Fascell then embarked on a series of pointed questions, frequently interrupting Holly during his responses. The exchange between Fascell and Holly regarding Interama's potential market area illustrates this:

Mr. Fascell. What area within the United States do you use as the basis for which this project will draw?

Mr. Holley. Primarily the southern United States which is the area from which—

Mr. Fascell. Four States, five States, 13 States, half the country?

Mr. Holley. Less than half the country.

⁵³ Irving E. Muskat to Richard L. Still, March 17, 1965, Chronological File - 1965, Box 5, S 489 Correspondence, IAR. Irving E. Muskat to Mr. Harrison A. Price, April 21, 1965, Chronological File - 1965, Box 5, S 489 Correspondence, IAR. ADL's decision to discontinue its services as the Trust Indenture's management consultant may have come about from Wilson's abrupt departure from the firm to enroll in the Peace Corps.

⁵⁴ Under Kennedy, the Authority was promised funds through the Alliance for Progress. Kennedy's assassination killed AFP funding, and so the Authority pursued, with Johnson's blessings, the CFA loan. See Hoover 456.

⁵⁵ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁵⁶ Ibid.

⁵⁷ Inter-American Cultural and Trade Center (INTERAMA), Hearing before the Subcommittee on International Organizations and Movements of the Committee on Foreign Affairs, House of Representatives, Eighty-Ninth Congress, First Session on H.R. 30 and Similar Measures to Provide for Participation of the United States in the Inter-American Cultural and Trade Center in Dade County, Fla. and for Other Purposes, August 26, 1965, 19-24.

⁵⁸ Inter-American Cultural and Trade Center (INTERAMA), Hearing before the Subcommittee on International Organizations and Movements of the Committee on Foreign Affairs, House of Representatives, Eighty-Ninth Congress, First Session on H.R. 30 and Similar Measures to Provide for Participation of the United States in the Inter-American Cultural and Trade Center in Dade County, Fla. and for Other Purposes, August 26, 1965, 45.

Mr. Fascell. What are your projections on the tourists, whether local, State, regional, or whatever?

Mr. Holley. We are projecting 20 million out-of-State visitors in Florida in 1970, for example. This increases to 25 million. In the order of 25 million in 1975 of which—

Mr. Fascell. Is that based on the annual rate of growth as shown by census figures?

Mr. Holley. The rate of increase from 1945 to 1964, which are the years on which we have data and have projected that ahead.

Mr. Fascell. Is that projection a conservative projection and in line with the previous known figures of growth?

Mr. Holley. It is based on previous known figures of growth.

Mr. Fascell. In other words, the projection is not enlarged in any way?

Mr. Holley. No, sir.

Mr. Fascell. You would call it from an economic standpoint a conservative projection?

Mr. Holley. Yes, sir.

Mr. Fascell. What did you estimate the attendance in the first year?

Mr. Holley. At Interama?

Mr. Fascell. For your economic figures.

Mr. Holley. 12.5 million; 12,566,000 exactly.

Mr. Fascell. You estimated attendance could be off by 50 percent and still continue debt service?

Mr. Holley. Still protect the debt service on both bond issues.

Mr. Fascell. Based on an admission figure of \$1.50 per adult?

Mr. Holley. Yes, sir. Mr. Fascell. Does that include children?

Mr. Holley. That is 75 cents.

Mr. Fascell. We did not have that in the record.

Mr. Holley. Yes sir.”⁵⁹

Considering that Fascell was an Interama ally, the exchange attempted to give the impression of a senator in favor of the project attempting to prove to his colleagues that supporting it was a sound decision. It was a deliberate team performance involving actors in congressional and outside expertise.

Fascell’s attempt to bolster the confidence among his congressional peers in ERA’s analysis failed miserably. After Fascell completed his questioning, Rep. Peter Frelinghuysen (R-NJ) pointedly asked Holley “are we to get no specifics” beyond had already been presented. Frelinghuysen asked Pepper if he could explain just exactly what the federal appropriation to run a pavilion (an initial \$11 million, followed by \$1 million annually) would actually be spent on. Above all else, Frelinghuysen invoked the shadow of the recent 1964-1965 New York World’s Fair Fair when he asked whether or not the “very high-flown objectives” of Interama could stand

⁵⁹ Inter-American Cultural and Trade Center (INTERAMA), Hearing before the Subcommittee on International Organizations and Movements of the Committee on Foreign Affairs, House of Representatives, Eighty-Ninth Congress, First Session on H.R. 30 and Similar Measures to Provide for Participation of the United States in the Inter-American Cultural and Trade Center in Dade County, Fla. and for Other Purposes, August 26, 1965, 50-51.

without further investigating the “specifics about the practical side” and “solid assurances as to the feasibility” of Interama. Why, he wondered, spend millions on a project with no certain success when the Graves Tract “might be well used for residential purposes.”⁶⁰ In response, Muskat replied that the final report from ERA would contain answers to Frelinghuysen’s concerns, and referenced the reports the group included as part of the testimony. But Frelinghuysen remained unconvinced, even irritated at the suggestion that 15 pounds of printed material could help him gain confidence in the project.

The Disney announcement of its plans to develop an “Experimental Prototype Community of Tomorrow” in Central Florida came as a sudden and forceful blow against the Authority.⁶¹ Muskat had only months before proclaimed Walt Disney’s interest in the project before a congressional subcommittee. The ERA and ADL feasibility studies for Interama, which had assumed a non-competitive context for the Center, were now useless. What made them so was, ironically enough, a project that ERA itself had helped make possible through feasibility work extending back to the 1950s.⁶² Yet even this did not kill off Interama. In 1967, Claude Kirk became governor of Florida in an upset election, the first Republican to hold that office since Reconstruction. Kirk’s election came about in part from a rift in the Democratic party in Florida, and his tenure was marked by antagonism with the state legislature.⁶³ For Kirk, Interama was an ideal target through which he could show how a Republican administration could finally succeed in building a project that had a long succession of Democratic governors had failed. He removed Muskat, appointing Gui L. P. Govaert as chairman of the Authority.⁶⁴ In a statement, Govaert asserted that Interama’s failure had been because of previous plans to finance it based upon the whim of politicians.⁶⁵

With Kirk’s blessing, Govaert hired Minoru Yamasaki to design the Tower of Freedom (FIGURE). Govaert hoped that by selling enough bonds to build the Tower, that Interama would finally attract industrial participants and convince Latin American governments to fund their own pavilions. Goodbody supported the project, and ERA completed a favorable analysis, projecting an estimated 2.2 million visitors per year. The ERA analysis even went so far as to suggest that an aerial tramway should be funded to complement the tower.⁶⁶ Report in hand, Kirk headed to New York to pitch the idea before a meeting of 50 corporate executives. Holley was to provide a reprise of his earlier congressional subcommittee performance via teleconference.⁶⁷ Yet much like the lukewarm assessment of the Ebasco study 12 years earlier, potential investors were skittish at the idea that Minoru’s Tower would be sufficient to not only maintain operations but provide a sound financial base to build the rest of the Center. ERA’s last official act was to advise Goodbody not to continue funding the payroll of Authority employees. Bound by the

⁶⁰ Inter-American Cultural and Trade Center (INTERAMA), Hearing before the Subcommittee on International Organizations and Movements of the Committee on Foreign Affairs, House of Representatives, Eighty-Ninth Congress, First Session on H.R. 30 and Similar Measures to Provide for Participation of the United States in the Inter-American Cultural and Trade Center in Dade County, Fla. and for Other Purposes, August 26, 1965, 28.

⁶¹ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁶² Mannheim, *Walt Disney and the Quest for Community*.

⁶³ On Kirk’s term as governor of Florida, See Tebeau, *A History of Florida*, 447-448, Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁶⁴ _____, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁶⁵ Statement of Gui L.P. Govaert, March 6, 1968, 7, Interama Press Kit, Box 2-1, Interama Records, 1952-1975, HMA.

⁶⁶ Economics Research Associates, "Economic Feasibility of Interama Tower of Freedom and Aerial Tramway," Los Angeles, CA, April 12, 1968, Corrected September 6, 1968, 1, Interama Papers, Tower of Freedom & Aerial Tramway, Box 1, Interama Reports, HMA.

⁶⁷ Gui. L. P. Govaert to All Authority Members, Weekly Report, Oct. 8-14, 1967, October 13, 1967, 6, Sept 1967 -Jan 1968, Authority Ex. Committee, Reports, Newspaper Clippings, Box 1-1, Interama Records, 1952-1975, HMA.

terms of the Trust Indenture, Goodbody had no choice. For all purposes, the Authority ceased to function. Nixon did give Interama one last final breath of life when he declared, along with Boston and Philadelphia, that Miami would be a designated site for the Bicentennial celebrations in 1976. Jim Rouse, the developer of Faneuil Hall in Boston and Columbia, Maryland, expressed momentary interest. One of his employees even attempted to continue the project after Rouse decided against it. In any case, Watergate and its aftermath killed any possibility of federal support.⁶⁸

Interama's best chances at succeeding were in its early years. Even after the decision to finance the early concept with bonds, there was still an opportunity to realize the innovative and unprecedented Interama. But that was cut short when Ebasco's engineers, unable or unwilling to imagine something beyond their own experience of the 1939-1940 New York World's Fair, supported a gradual drifting of the concept from a hemispheric trade and cultural center to just another world's fair. While later advisors, including Muskat, Massmann, ADL, and ERA, were capable of understanding the idea of Pan-Americanism and expressing it in a permanent exposition, both Kennedy's assassination and the financial disaster of the 1964-1965 New York World's Fair meant that gaining the confidence of key figures in congress and the Department of Commerce proved impossible; this despite the best efforts to perform as an outside expert by ERA VP Herbert Holley.

Yet in one sense, ERA succeeded. Per the Trust Indenture, the firm's function was to protect the Graves Tract - public land deeded to the Authority (itself a state agency) - from falling into the hands of private investors. Today, the Graves Tract is home to the Biscayne Bay Campus of Florida International University (which opened in 1977). The rest of the former Tract makes up Oleta River State Park, the largest urban park in the state at over 1000 acres.⁶⁹ In January 2015, I traveled to Oleta State Park (Figure 5.6). The ranger at the entrance booth knew about Interama. Occasionally someone will come along asking about Interama. Miami ultimately became the hub and gateway for trade and cultural exchange with the Caribbean and Latin America.⁷⁰ Walking through Oleta State Park, knowing the history of the decades-long effort to bring Interama to light, it is tempting to imagine that the notional Center, in some way, did help bring Miami to its current world place.

⁶⁸ Hoover, "Before Disney Arrived: Florida's Ill-Fated Attempt to Build Interama."

⁶⁹ Ibid.

⁷⁰ Ibid.



Figure 5.6. Picnic table and barbeque in Oleta State Park, North Miami, Florida. In the background is FIU's Biscayne Bay Campus. The lagoon in the midground is the former "Bahia de las Americas." Photograph was taken near what would have been the International Area's Ceremonial Plaza facing west. Minoru Yamasaki's Tower of Freedom would have risen from the Bahia center right. Source: author, January 14, 2015.

Epilogue: From Disneyland to Abuja and Beyond

The same year that ERA's Herbert Holley testified before the Subcommittee on International Organizations and Movements on behalf of Interama, ERA had become a respectable firm of a few dozen consultants and their support staff, quite a long way from its early days in a room above Price's garage and an office room in the WED building on the Disney studios. ERA's Century 21 and WED project work (Chapters 2 and 4) did much to increase the prestige of Price's company leading to more clients and more projects. By 1970, ERA became a multi-national firm of 90 consultants, with over 6,000 studies completed.¹ After the success of Century 21, ERA became the go-to firm for anyone contemplating a project in theme parks or world's fairs. The firm's resume of client projects reads like an official listing of almost every fair and expo, realized and unrealized, in the United States. Besides Seattle, other fair work included Spokane, Long Beach, Miami, Montreal, San Antonio, Knoxville, and New Orleans.² In all of these, ERA's work involved bringing boosters and prospective sponsors together through pro-forma financial demonstrations of the fair's probable success. ERA did not limit itself to projects in what is now known as commercial recreation, however. Aerospace and defense, as well as heavy industry, in fact provided the majority of ERA's revenue.³

A few years after Price started ERA out of a room above his garage, two employees from RAND Corporation in neighboring Santa Monica quit their jobs and founded Planning Research Corporation. They wanted to take the approach of RAND – its methods and style of objective research – and put those to use in a for-profit consulting firm. It was a play very similar to Price's own, who began his career in economics consulting at the non-profit SRI. Like Price, the gamble for PRC's founders paid off. There was so much demand for planning that PRC underwent rapid growth. In the mid-1960s, while Price was busy working on Disney projects and his vice president Holley was coordinating the Interama work, the head of PRC actively lobbied Price to merge ERA with PRC. Price declined, but eventually the offer was too attractive, both financially for ERA – and professionally for Price. He agreed to the merger, and in a very short time became a vice president for what in a few short years would be the largest professional services firm in the world.⁴

It was certainly a smart move. ERA became a division of PRC, bringing with it a track record of applied economics across a wide range of industries. The firm had also just recently been involved in what would have been one of the nation's greatest planned communities, the original concept for Disney's Experimental Prototype Community of Tomorrow.⁵ That project brought a UCLA academic, Thomas J. Ashley, on to ERA's staff, greatly expanding the expertise ERA had on staff in urban planning and development. Ashley was an expert in the theory of urban planning, and cut no expenses in the research he completed for the EPCOT

¹ "The Basix Profile . . . Harrison 'Buzz' Price" the Basix, November, 3, Folder: Series VII. Harrison price Company -- Profiles/Bios. 1994, Box 21, Series VII, HAP.

² Price, *Walt's Revolution!: By the Numbers*.

³ Ibid.

⁴ Ibid., 284. Economics Research Associates -- Correspondence -- Bob Kruger Correspondence, 1964, Box 136, Series VIII, HAP. "Litton PRC," <http://www.asq0511.org/Presentations/0701/sld004.htm>, accessed June 3, 2016. "Planning Research Corporation: A Decade of Service," Planning Research Corporation, Los Angeles, CA, 1964, Economics Research Associates -- Correspondence -- Bob Kruger Correspondence. 1964, Box 136, Series VIII, HAP.

⁵ On the original vision of EPCOT see Mannheim, *Walt Disney and the Quest for Community*.

project.⁶ Under Price ERA had also continued to build a client base outside of urban planning and commercial recreation. Lockheed (in sales volume ERA's biggest client), Harvey Aluminum, and other industrial firms gave ERA wide exposure to the elites of American business and banking. Price used these connections to expand PRC's business beyond the nation's borders, including Saudi Arabia and, as this dissertation opened with, Nigeria.⁷

Price's story and that of ERA reflect similar ones found with other members of his cohort discussed in this dissertation. William J. Platt, who gave Price his first job at SRI when the latter was a newly minted MBA, would go on to work in international development, focusing on education, becoming a high-ranking official in UNICEF. C. V. Wood, who after leaving SRI and Disneyland, went on to build planned communities throughout the United States. One of his greatest accomplishments was Lake Havasu City, which included a recreation of an English village in its town center. The crown piece was the actual London Bridge, brought brick by brick, across an ocean and to an American desert.⁸ And as told in the above chapters, Bill Royce, who was the project lead for SRI's Century 21 work, would soon thereafter go on to start SRI's first office in Japan. H. Donald Wilson left his job at ADL's New York office to spend several years in Africa with the Peace Corps. Even Madigan-Hyland once advised the World Bank on Colombia's planned railroad restructuring.

"Many of these men began their careers working on projects of mass leisure: Disneyland, Century 21, the New York Fair, and Interama. They also helped usher in one of the most innovative technologies in entertainment during the 1960s, Audio-Animatronics. These projects were of immense scale, strikingly innovative for their time, while also unproven and with no assurance of their ultimate success. All of these projects involved the need to prognosticate a future vision in which success might be achieved. They required coordinating a diverse set of interests in common pursuit of a goal. They were not always successful. And as Abuja suggests, the work they did in mass leisure would have direct relevance on their prestige and influence later in their careers. Especially as these consultants went on to help different clients in other places reshape their own nations.

In part, clients hired them because these consultants could perform as objective, outside experts. As Theodor Porter has noted, quantification seems to make the appearance of doing something when it is not doing anything. That something, however, is itself important. Modern society, for as much as it seems to break with every precedent of traditional ones, is still made with the past's cloth.⁹ It needs prognosticators, seers able to not only divine the future, but also help cast away uncertainty and replace it with confidence. In a different time and place, the props of virtuosity in statistics, linear programming, queueing theory, FORTRAN, augmented by class rings, punctual arrival at the office on a Monday morning to take the client's call, ensuring every report has a title page, and having a receptionist able to recognize a client's voice and greet them appropriately,¹⁰ would seem strangely out of place, and certainly not markers of someone blessed

⁶ Thomas J. Ashley, November 13, 1967, Economic Research Associates -- Correspondence -- Correspondence, 1967, Box 136, Series VIII, HAP. Thomas J. Ashley to Elliot L. Lewis, July 18, 1966, Disney -- Walt Disney Productions -- Housing and Urban Development (HUD) Presentation for EPCOT federal assistance, 1966, Box 85, Series VII, HAP.

⁷ On his time at PRC see Price, *Walt's Revolution!: By the Numbers*, 298-301.

⁸ Pierce, *Three Years in Wonderland: The Disney Brothers, C.V. Wood, and the Making of the Great American Theme Park*, 5.

⁹ For a take on the sociological profession's division between traditional and modern societies, see Bruno Latour, *We Have Never Been Modern* (Cambridge, Mass.: Harvard University Press, 1993).

¹⁰ Price, *Walt's Revolution!: By the Numbers*, 284-297.

with the gift of divination. But in our modern era, where science, rigor, and rationality are privileged, those are precisely the devices one needs to show to others that they can provide a glimpse into the uncertain future by reading a chart on the wall. They were men who gave their clients confidence to move forward. As C. V. Wood once told Price, “You and I are both con men, Buzz, but we deliver the goods.”¹¹

¹¹ *Ibid.*, 131.

References

Abbreviations used in footnotes

- HAP Harrison A. Price papers, University of Central Florida Special Collections
SRI Stanford Research Institute Records SC 801, Special Collections, Stanford University
C21 Century 21 records, Puget Sound Regional Archives, State of Washington
WJP William J. Platt papers, Hoover Institute Archives
SBS Records of the U.S. Strategic Bombing Survey, Record Group 243; National Archives II, College Park, MD
EWM Earnest W. Moeller Collection, D165, Anaheim Heritage Center
LCM Leonard C. Moffitt files MS-R116, UCI Special Collections
ECD Ewen C. Dingwall papers, University of Washington Special Collections
JEG Joseph E. Gandy papers, University of Washington Special Collections
NYFC New York World's Fair 1964-1965 Corporation Records, Archives & Manuscripts Division, New York Public Library
ADL Arthur D. Little, Inc., records, MIT Archives
DOC Department of Commerce records, Record Group 40, National Archives II, College Park, MD
HMA HistoryMiami Archives, Miami, FL
IAR RG 591 Inter-American Center Authority (INTERAMA) Records, Florida State Archives, Tallahassee, FL

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