AN EXAMINATION OF THE PROCESS OF INNOVATION AT TRANSIT SYSTEMS

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ABSTRACT

This paper reports on a study of the innovation process in transit agencies. This study had two major components. First, case studies were conducted of innovations adopted by transit agencies in Wisconsin. Secondly, transit agencies across the country were contacted to get a sense of the issue of innovation and change via an on-line survey. An analysis of the case studies showed that many of the case studies had common themes and barriers to the various innovations studied. These barriers and themes were funding, nature of the organization, persistence, regional planning commission, user involvement, problem centered approach, and a champion. The innovations discussed in the case studies came about because there was a need to improve the transit systems, an internal champion, funding, and persistence to overcome barriers to change. Analysis of the survey results revealed that the primary institutional barrier to innovation or change was money, and the main reason for change was having an internal leader/champion.

Innovation is most likely to occur when there is a need to improve service, when there is a champion to lead and coordinate to bring about the change, and when there is a source of funds for the planning and implementation of the innovation.

INTRODUCTION

There is an old saying, "If you build a better mousetrap, the world will beat a path to your door". Unfortunately, as anyone who works with new technologies and systems knows, it isn't that easy. This is especially true for public agencies such as urban transit organizations. In order for transit agencies to use new systems and technology, transit agencies have to find ways to deal with severe budget limitations, staff shortages, intense media scrutiny, and sometimes a hostile political climate. Innovation is a complex process and occurs when a new technology or system is introduced. Innovation is important to all organizations, including transit, and it is a complex process that must occur in the context of people, programs, and funding of an organization.

Public agencies are not known to be risk takers and the innovation or change has to be substantiated by a need. In many cases, political or community factors can prevent an innovation from being introduced. Also, while transit agencies may recognize a need for change, lack of necessary funding will make it difficult to initiate the improvement. Transit agencies could have the money for an innovation but if there is no one to champion the innovation, change is not likely to occur. The process to bring about change varies depending on the need, type of innovations, nature of the organization, funding, political support, and having a champion for the change.

Surprisingly little is known about the process of change in transit agencies and how they overcome barriers to use the new technologies and systems. Innovation, change, and technology transfer can occur in many ways and forms. According to Jelinek, "Innovation is a locally driven process that succeeds where organizational conditions foster the transformation of knowledge into products, processes, systems, and services" *(1)*. Technology transfer is "aimed at using the benefits of someone else's successful research, development or experience to their benefit locally—often at a fraction of the original development cost … in the transportation sector, as in any field, can be a catalyst for long-term change and improvements" *(2)*. There are many factors that affect the implementation of an innovation. The innovation needs to be simple, easy to try and introduce, have easily measured benefits, inexpensive, and provide significant improvement.

The research questions of this project are: What are the conditions that lead to innovation in transit agencies? and What barriers exist to innovation and how can they be overcome? The key term here is "innovations." Innovations are simply ideas, technologies or procedures new to a particular agency. As Schweppe asserts, "introducing innovative technologies into day-to-day practice can save time, money, and even lives" *(3)*. Then the question becomes, what type of innovations? What may be innovative for one agency may not be considered an innovation for another agency because that particular innovation may have been in place for many years.

The issue of innovation at transit agencies is important for a number of reasons: transit has the potential to help ease congestion by capturing additional riders, various innovations could make transit agencies more efficient in their everyday operations, reduce costs, enhance safety for passengers and bus operators, and help make transit more feasible for everyone.

Objectives and Procedure

The objective of the work is to examine the process of innovation at transit agencies to see how they adopt new technologies and systems. This was done through face-to-face interviews to identify barriers to innovation from transit agencies and via an on-line survey. The first part of this effort was to analyze case studies of innovations to understand the process that led to their

adoption. This was equivalent to a benchmarking process. Benchmarking is described as a process to "determine who else does a particular activity the best and emulate what they do to improve performance" *(4)*. Through the benchmarking process, transit agencies could ascertain the benefits, advantages, and disadvantages of certain innovation from agencies that have already implemented that change and avoid making the same mistakes. The second part of this work is to develop a general picture of the attitudes towards innovation and barriers to change for transit agencies across the country. This was done with an on-line survey of 49 transit agencies across the United States, from small to large organizations, to distinguish key factors that led to an innovation.

This work was conducted as part of a project to showcase transit innovations that have been developed at transit agencies and to investigate the concept of benchmarking and technology transfer in the transit industry *(5)*. Further details on the project are available on the project web site.

Both case studies and surveys were conducted to provide alternative ways to understand the innovation process. The case studies were limited to transit agencies located in the State of Wisconsin metropolitan areas. Due to their location near the university, transit agencies in Milwaukee, Racine, Waukesha, and Ozaukee counties, and the City of Madison were used as case studies. Innovations at these agencies were selected based on personal knowledge of the systems. In addition to the face-to-face interviews, communication with the transit agencies was conducted through email and telephone conversations.

For the survey portion of the research, 232 transit agencies across the country were contacted through email. Two emails were sent: an initial email with the explanation of the study and a web address for the on-line survey, and a reminder email with the web address again. Responses were received from 49 agencies.

CASE STUDIES FINDINGS

The first portion of this study was face-to-face interviews with transit agencies to gather case studies of transit agency innovation. The case studies were used to determine the factors that bring an innovation to fruition and to identify key factors in its adoption. Nine case studies were conducted: Caledonia Shared-Ride, Madison Metro Transit Transfer Centers, Milwaukee County Transit System (MCTS): Semi-Annual Quality Measurement Survey, Milwaukee County Transit System: Special Events Service, Ozaukee County Express, Ozaukee County Shared-Ride Taxi, Transit Mutual Insurance Corporation of Wisconsin (TMIC), The University of Wisconsin-Milwaukee (UWM): UPASS, and The Waukesha Internet Trip Planner. Details of each project are posted on the internet at http:www.uwm.edu/Dept/cuts/bench/. Innovations were chosen based on local knowledge of the transit agencies and through discussions with agencies' personnel. They were selected because the innovations were relatively new changes for the agency and actions that took considerable effort to overcome numerous barriers.

In analyzing the case studies, ten factors that could affect the implementation of the innovation were identified. These factors were: cost, risk of failure, lack of personnel, negative media attention, political climate, champion, labor contract, ability to explain innovation, time to implement, and persistence. Upon analysis of the case studies, it was found that seven of the ten factors were involved in the implementation of the innovations. Two factors were prevalent in the majority of the case studies: cost and champion. In fact, the presence of a champion played a major role in bringing about the innovation for all nine case studies. Some of the factors, lack of

personnel, labor contract, and ability to explain the innovation, were not factors in any of the case studies. An analysis of the case studies showed many common themes and barriers to the various innovations highlighted (Table 1).

One common theme that was prevalent in all of the case studies was that they directly responded to problems and a desire to make improvements to the transit systems. The innovations studied were "bottom-up" projects – problems seeking solutions. The Caledonia Shared-Ride came about because of a need to serve the residents located in a suburban area served by a fixed-route loop. The Madison Transfer Centers came about to serve the needs of those in the suburban areas commuting into the city. The Milwaukee County Transit System's Semi-Annual Measurement Survey started out to gauge the experiences of riders for finding improvement areas. The MCTS's Special Events busing started out serving the Summerfest patrons to help alleviate traffic and parking demands around the events. The Ozaukee County Express was begun to provide transit access to those inside and outside of the county for employment in the county, to ease a labor shortage. The Ozaukee County Shared-Ride Taxi started out serving the elderly and the disabled but has expanded to serve everyone without access to automobiles or with difficulty getting to transit stops. The Transit Mutual Insurance Corporation came about because there was a need to find cheaper ways to insure the members of the buying group. The UWM's UPASS came into being to solve the parking demand problem associated with the growth of the university. The Waukesha Internet Trip Planner began as a way to better serve those who may be transit dependent in finding the best and shortest routes possible to get to a destination.

All of the innovations, changes, and improvements came about because there was a need for service level enhancement. The common theme among the transit agencies was that ideas and innovations were generated from a need to better serve residents, students, employment seekers, riders, and communities. Whether the need arose from increasing parking and traffic demands or a labor shortage or to accommodate growth, the commonality among the innovations discussed in the case studies is that they were done in response to problems, rather than as a solution in search of a problem.

Table 1 illustrates which factors were utilized in the implementation of the innovations. Cost was an important factor for seven of the nine projects. Congestion Mitigation Air Quality (CMAQ) money played a key role in several. Because of the CMAQ money, Caledonia was able to reduce their costs and change transit services. As for Ozaukee County Express, despite political opposition, together with CMAQ and funding by local businesses, the county accepted the project. Initially, the main barrier to the Ozaukee County Shared-Ride Taxi program was money because the expansion of the program would have increased operational costs. For the UWM's UPASS, the initial resistance came from the administration, which did not want to increase student tuition fees any more than necessary. The program was able to overcome this resistance once the students voted in favor of such a program. Cost was an important factor for many of the transit agencies examined because it served either as the impetus or an initial barrier to change.

The risk of failure is a factor that affected half of the transit agencies studied. Whether the innovation dealt with altering transit services, changing transit operations overnight, expanding the current paratransit program to the general public, starting a new transit service, or creating a UPASS for students, the risk of failure factor was important. In all of these cases, had the innovation not worked, it would have meant going back to the status quo and not being able to make service enhancements for the public.

After the analysis of the case studies, it seemed that negative media attention would have affected Madison Transfer Center and MCTS: Special Events the most. For Madison, since the whole transit operations were being converted to the timed transfer system overnight, had the innovation not worked, negative media attention could have been an issue. Since one of the benefits of providing special events busing to festivals in Milwaukee was to introduce transit to those who normally do not utilize transit, negative media attention would have had the opposite effect.

The political climate was an important factor for Caledonia, Ozaukee Shared-Ride, and Ozaukee County Express. For the Caledonia Shared Ride program, the town board was at first resistant to the idea of changing transit services. In fact, the town had twice rejected the idea of a shared ride program. When asked the third time, the town finally said, "maybe." For both the Ozaukee County Shared-Ride and Ozaukee County Express, one of the key barriers to implementation was political opposition. Political concerns kept the innovation in the news, and the political climate of the county was skeptical of the innovation.

With regard to the Madison Transfer Centers, the transit agency had the support of the political leaders but had the neighborhood opposition to the project. Neighborhoods selected for the transfer centers resisted to the idea of having transit centers with retail and commercial establishments in their "backyard." Residents of the selected neighborhoods tended to oppose the project. The opposition was overcome when the transfer center was redesigned to only accommodate riders making transfers and making it impossible for anyone to loiter around the centers due to the presence of retail establishments and seating areas. Since it took nine years to implement the change, persistence was very important for Madison as well.

SURVEY RESULTS

The purpose of the on-line survey was to gather information about how transit agencies implement change and innovations. Questions addressed the importance of certain issues, the agency's primary concern, the status of certain innovations, the agency's attitude towards innovations, the importance of various issues when considering an innovation, and the institutional barrier to innovation. An on-line survey was sent to 232 transit agencies and 49 responses were received. Analysis was done using responses of all 49 transit agencies and then the transit agencies were divided into two groups: small and large transit agencies. Transit agencies with less than 100 vehicles in the fleet were categorized as small transit agencies (29 respondents). Transit agencies with more than 100 vehicles in the fleet were categorized as large transit agencies (20 agencies).

Importance of Various Issues

The first question asked the respondents how important various issues are at their agency. These were chosen to give an overall picture of general concerns to help interpret other results. The issues were: funding, ridership, cleanliness of buses, security on buses, and high turnover of bus operators. More than 90% of the respondents said funding and ridership were "very important." For cleanliness of buses and security on buses, more than 70% of the respondents said these two issues were very important and 18%-20% of the respondents said the two issues were "somewhat important." As for high turnover of bus operators, only 35% of the respondents said this issue was "very important," whereas 27% said it was "somewhat important," 18% were neutral, and

20% of the respondents said the issue was either "somewhat unimportant" or "not very important."

Figure 1 illustrates the weighted average for the question: How important is each of the following to your agency on a five point scale with 5 = very important and 1 = very unimportant? Funding was found to be the most important of the issues measured amongst all transit agencies. Small transit agencies also found funding to be the most important issue. For large transit agencies, ridership was found to be the most important issue.

Both small and large agencies rated the issues nearly the same. In comparing the averages between large and small agencies for funding, ridership surveys, cleanliness of buses, security on buses, and high turnover of bus operators using the t-test showed that there was no significant difference in the rating of these issues by large or small agencies.

Primary Concern

Figure 2 shows the data for the question: Which of these is the primary concern at your transit agency? Not surprisingly, 67% of the respondents said funding was the primary concern at their transit agency while 27% of the respondents said ridership was the primary concern at their transit agency. Only one transit agency responded that security on buses was the primary concern. Two transit agencies listed other concerns, such as overcrowding on buses, providing good transit service, and operating funding as their primary concerns.

Agency's Status with Various Innovative Activities

Agencies were asked the status of various activities from having it in operation, installation underway, or considering for next year. The innovations were ridership surveys, AVL (automatic vehicle locator) systems, signal priority systems, transit centers, shared ride programs, special events buses, changes in maintenance practices, automatic passenger centers, alternative fuel buses, bus rapid transit, and others. Weighted averages are illustrated in Figure 3, with a high score indicating the greatest amount of activity. A score of 5 represents the response – in operation, 4 – being installed, 3 – considering for next year, 2 – considering in three years, and 1 – not considering.

Only two activities had been implemented in most agencies with more than 80% of the respondents saying that ridership surveys and special events busing were in operation. More than 50% of the respondents said security cameras were in operation. Almost half of the respondents said transit centers, shared ride programs, and changed maintenance practices were in operation. However, 37% of the respondents also said that shared ride programs were not in consideration at all. It seems for shared ride programs, either the programs are already in place and operating or are not being considered for implementation.

Also, a quarter of the respondents said changed maintenance practices were not being considered. Furthermore, close to 40% of the respondents responded that signal priority programs were not being considered. More than 50% said that bus rapid transit was not being considered. However, about 34% of the respondents said that bus rapid transit was being considered either for next year or the next three years. Only 8% and 4% of the respondents said the bus rapid transit was already in operation or being installed, respectively.

For the automatic vehicle locator (AVL) and automatic passenger counters, the distribution of the responses seems even. One eighth (13%) of the respondents indicated that AVLs were not being considered, and a little over 20% said that AVLs were in operation, being installed, or being considered from 1 to 3 years. As for the automatic passenger counters, 12% of the respondents said that the program was being installed, and about 20% said they were in operation, or being considered from 1 to 3 years. One-third of the respondents said the alternate fuel buses were in operation and another third indicated they were not being considered.

Some of the respondents also said they were involved with the following other activities: on-line trip planning, talking bus, new streetcar line, wireless communication ability, surveillance cameras, enhanced marketing, real time passenger information, voice announcements, community based transit, Smart Card fare box technology, and enhanced paratransit service.

Evaluating the averages for status with various innovations between large and small agencies using the t-test showed that there were significant differences for some of the innovations. The t-tests indicated that there was no difference between the averages of large and small agencies for the following innovations: ridership surveys, shared ride programs, special events busing, changed maintenance practices, and automatic passenger counters. There were significant differences for: AVL, signal priority, transit centers, security cameras, alternate fuel buses, and bus rapid transit. These innovations appear to be more appropriate for larger agencies.

Attitude Towards Innovation

Most of the responding transit agencies' attitude towards innovations was described as either very high or moderately high. Only 8% of the respondents said the agency was neutral and only 4% of the respondents said the agency was somewhat resistant to innovations. None of the respondents said that their agency was very resistant towards innovation. These results indicate that a majority of the respondents have a positive attitude towards innovations.

An agency's attitude towards innovation does seem dependent on the transit agency size. Ninety-five percent of the respondents at large transit agencies said their agency had a very or moderately high attitude towards innovation. At small transit agencies, 83% of the respondents said their agency's attitude towards innovation was very or moderately high.

Primary Reason for Change

Not surprisingly, 76% of the respondents said that the primary reason for change or implementing an innovation at their agency was due to an internal champion or a leader pursuing the innovation. Only 10% of the respondents said that the primary reason for change was due to suggestions from the board or ridership. Some of the responses in the "other" category were changes in technology, affordability, perceived challenge, opportunity for increase ridership or revenue, improvement in operations/service/reduce operating costs, and planning decision based on operational needs (Figure 4). Size of the transit agency did not matter in that an internal champion was critical to bringing about change to an organization for both size categories.

Importance of Issues When Considering Innovations

Figure 5 illustrates the weighted average by size of agency for the question: How important is each of the following to your agency when you consider an innovation? When considering the weighted average for all transit agencies, operating cost was found to be the most important factor. Ninety-eight percent of the respondents said this issue was either very or somewhat important. Large transit agencies also found operating cost to be the most important consideration. However, the initial cost of the innovation was found to be the most important when considering an innovation for small transit agencies, followed closely by operating cost. Regardless of the size of the transit agency, cost in general was found to be most important when considering an innovation.

More than 50% of the respondents said risk of failure and lack of personnel issues were somewhat important. A little more than 40% of the respondents said either negative media attention or the political climate was somewhat important when considering an innovation. However, 88% of the respondents said internal leadership was either very or somewhat important. With regard to the labor contract issue, close to 30% of the respondents were neutral on the topic. In fact 24% of the respondents said the labor contract was not very important when considering an innovation. However, 43% of the respondents said the labor contract issue was either very or somewhat important. Sixty-six percent of the respondents said the ability to explain an innovation was either very or somewhat important. As expected, time to implement a change was an important issue when considering an innovation. Seventy-one percent of the respondents said the issue of time was either very or somewhat important when considering an innovation.

When considering innovations, the size of the agency mattered when it came to some issues. The t-tests indicated that there was no significant difference between the averages of large and small agencies for the following issues: operating cost, risk of failure, lack of personnel, possible negative media attention, political climate, internal leadership, and labor contract. On the other hand, there were significant differences for the following issues: initial cost, ability to explain, and time to implement a change.

Primary Institutional Barrier

As for the question, what primary institutional barrier does your agency face when implementing a change/innovation, 57% of the respondents said money. Fourteen percent of the respondents said lack of personnel was the primary barrier and another 12% of the respondents said external government bureaucracy was the main barrier to innovation. Only 12% of the respondents said internal leadership, organization's nature, or time was their primary institutional barrier. Other primary barriers included public input/resistance to any change and training on new equipment/software/etc.

With the issue of money, the size of the transit agency had an effect. For both large and small transit agencies, the primary institutional barrier to implementing an innovation was money. However, lack of personnel was a greater concern for small agencies.

Average Time of Innovation Implementation

With regard to the question, what is the average time (planning and implementation) that it takes to implement an innovation or change at your transit agency, more than 50% of the respondents said it took about 6 months to 1 year. Only 6% of the respondents said that the average time for implementation was less than 6 months. A third of the respondents said the average time took 1 to 2 years for an innovation to be implemented. One-tenth of the respondents said that it took more than two years to implement an innovation.

Small transit agencies felt it took less time to implement projects than large transit agencies. For large transit agencies, 45% of the respondents said the average time to implement an innovation was 1 to 2 years. For small transit agencies, 62% of the respondents said the average time for innovation implementation were 6 months to 1 year.

Local Funding Sources

Responses varied for the question: What is the transit agency's main local funding source? A third of the respondents said their main local funding source was derived from sales tax and another third said it was derived from other local taxes. Twenty-five percent of the respondents said their main local funding source came from property tax. One respondent said their main local funding source came from income tax and two respondents said there were no local funding sources.

When transit agencies are categorized as small and large agencies, the sources for main local funding are different. For large transit agencies, 45% of the respondents said sales tax was their main local funding source, followed by property tax (25%) and other local tax (20%). For small transit agencies, 43% of the respondents said other local tax was their main local funding source, followed by sales tax (29%) and property tax (25%). For large transit agencies, sales tax is an important funding source while for small agencies, other local taxes play a big part as the funding source.

Decision Making Authority

With regard to decision making authority, the following question was asked: Who has the final decision making authority at your transit agency? A little more than half (58%) of the respondents said the board of directors had the final decision making authority at the transit agencies. Sixteen percent of the respondents said a City Council had the final decision making authority, whereas another 14% said the County Board. None of the respondents said an internal group at the transit agency had the final decision making authority but 4% of the respondents said the director of the transit agency did have final authority. For the rest of the respondents, the person or group having the final decision making authority included student government, the Secretary of Transportation, the general manager/local transit authority board, a regional Council of Governments, the mayor, and a transportation committee of a regional government.

For large transit agencies, an overwhelming majority (75%) of the respondents said the Board of Directors had the final decision making authority, while for small transit agencies, only 45% of the respondents said the Board of Directors had the authority. For small transit agencies, 28% of the respondents said the City Council had the final decision making authority, followed

by 17% responding with the County Board. It seems that the decision making authority varied, depending on the size of the transit agency.

Respondent's Characteristics

The respondent's number of years in the transit industry (both private and public) was evenly distributed when categorizing the years into every five years. Only 10% of the respondents had more than 31 years of experience in the transit industry and 18% had less than five years of experience. More than 50% of the respondents held a director position and 29% had a staff position. The remaining 20% of the respondents held other positions at the agency that ranged from CEO to president to general manager to transit administration manager to program supervisor to administrator to operations manager.

SUMMARY OF FINDINGS

The objective of this research was to identify the factors, which affect the ability of transit agencies to introduce new systems and technology. Innovations were analyzed so that other transit agencies can have guidance when attempting to bring about similar changes to their organizations. Through this process, transit agencies could ascertain the benefits, advantages, and disadvantages of innovation from agencies that have already implemented that change and avoid making the same mistakes.

This work consisted of two components, case studies of innovations that have been implemented at transit agencies in the Milwaukee and Madison metropolitan areas and an on-line survey to get a sense of the status of innovations from transit agencies across the country.

The literature reviews, case studies findings, and the survey agreed on the key issues important to bringing about change, primary institutional barriers to innovation, and primary reason for change. All of the innovations discussed in the case studies happened because there was a need and/or a desire for making improvements to the transit systems. The on-line survey further substantiated the case studies findings.

One of the key factors to innovation implementation for the case studies was the presence of a champion. The importance of having a champion to lead the effort is also corroborated by the survey, where 76% of the respondents said the primary reason for change was an internal champion/leader pursuing the innovation.

Persistence was another important factor in several of the case studies, particularly when there was neighborhood opposition or skepticism on the part of administrative boards because of the costs involved. About half of the respondents to the survey indicated that it takes six months to a year to implement a change and another third said one to two years.

When considering an innovation, an overwhelming majority of the respondents said initial costs of the innovation and operating costs were either very or somewhat important. Funding, specifically operating costs were found to be the most important of the issues measured among all transit agencies regardless of the transit agency size.

CONCLUSIONS

In summary, the case studies findings, survey results, and the literature review show that the two key elements to bringing about change or an innovation to an agency are having a

champion to pursue the innovation and to have funding available for the project. Literature reviews, case studies, and the survey results also reveal that it takes more than a champion and money to implement an innovation.

Agencies should create conditions necessary where champions can emerge and are encouraged. This means a willingness to take risks, a tolerance for failure, an ability to clearly explain the innovation, and ways to measure its success. Having enough funding is not enough; the lack of a champion could delay an innovation, or never have it come to fruition. Transit agencies need to adopt a positive attitude toward change, identify a need, benchmark it, carefully select innovations, and implement them for continuous quality improvement.

Transit agencies, and state and federal agencies should consider the establishment of explicit ways to enhance innovation. They need a process that identifies needs within their organization for improvement, finds innovations that address the need, and benchmark the innovations. Through the process of identifying, finding, and benchmarking innovations, transit organizations could learn from other transit agencies. This process will help identify any barriers the transit agencies had to overcome and develop a general sense of attitudes toward innovation. This process could help the transit agencies better facilitate in bringing about change to their organization. If a champion is not already present, agencies need to identify and encourage champions to lead the change. Innovation is not easy, and persistence is the key to ensuring that the innovation will eventually occur.

Finally, there is a need for transit agencies to share their experiences and expertise through various technology transfer outlets. Innovation and technology transfer should occur by information sharing (papers, workshops, publications, reports, etc.), partnerships, coalitions, technical assistance and training, and personnel exchanges.

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LIST OF TABLES AND FIGURES

TABLE 1 Table of Innovations and Factors

	Innovation								
Factors	**Caledonia Shared-Ride**	**Madison Transfer Centers**	**MCTS: Special Events**	**MCTS: Survey**	**Ozaukee Shared-Ride**	**Ozaukee County Express**	**TMIC**	**U-PASS**	**Waukesha Internet**
Cost	X	X	X		X	X	X	X	
Risk of failure	X	X			X	X		X	
Lack of personnel									
Negative media attention		X	X						
Political climate	X				X	X			
Champion	X	X	X	X	X	X	X	X	X
Labor contract									
Ability to explain innovation									
Time to implement		X							
Persistence	X	X				X		X	

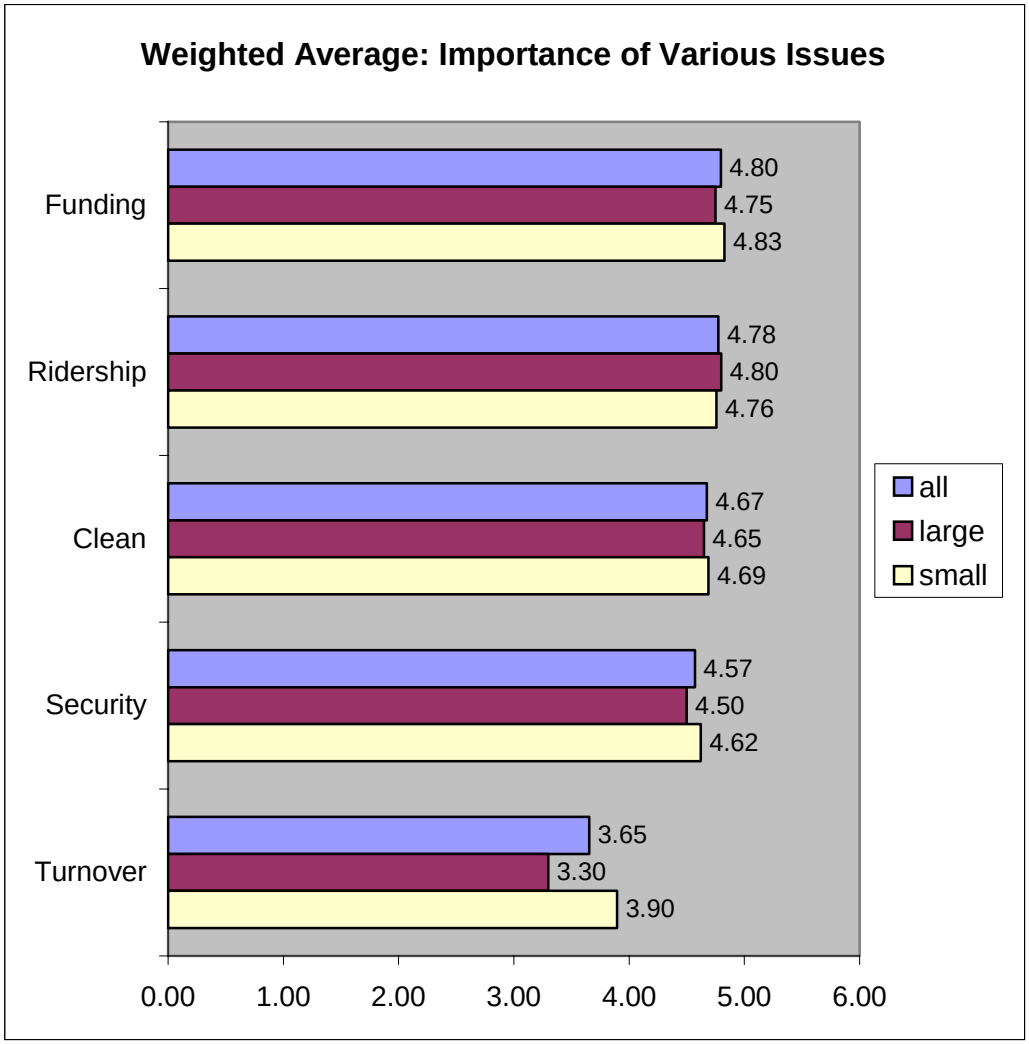

FIGURE 1 Weighted average -- Importance of various issues.

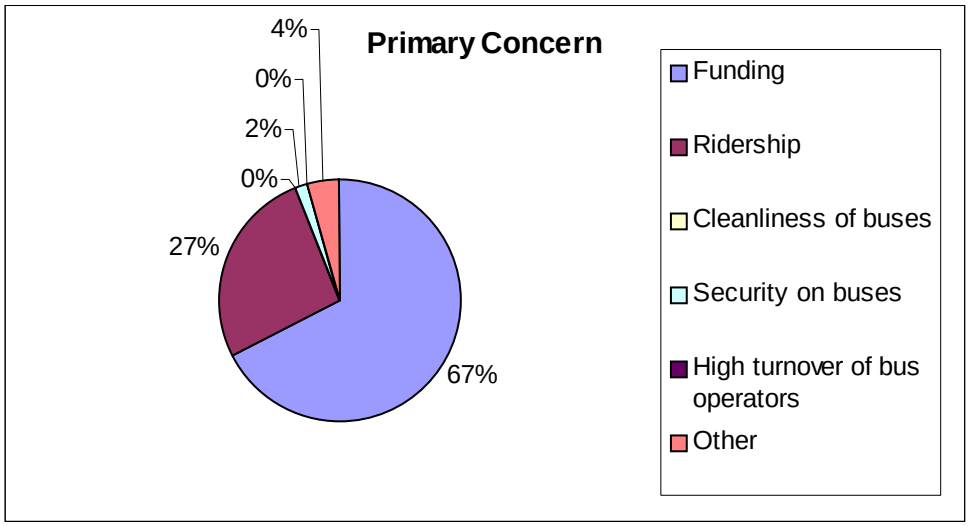

FIGURE 2 Primary concern at transit agency.

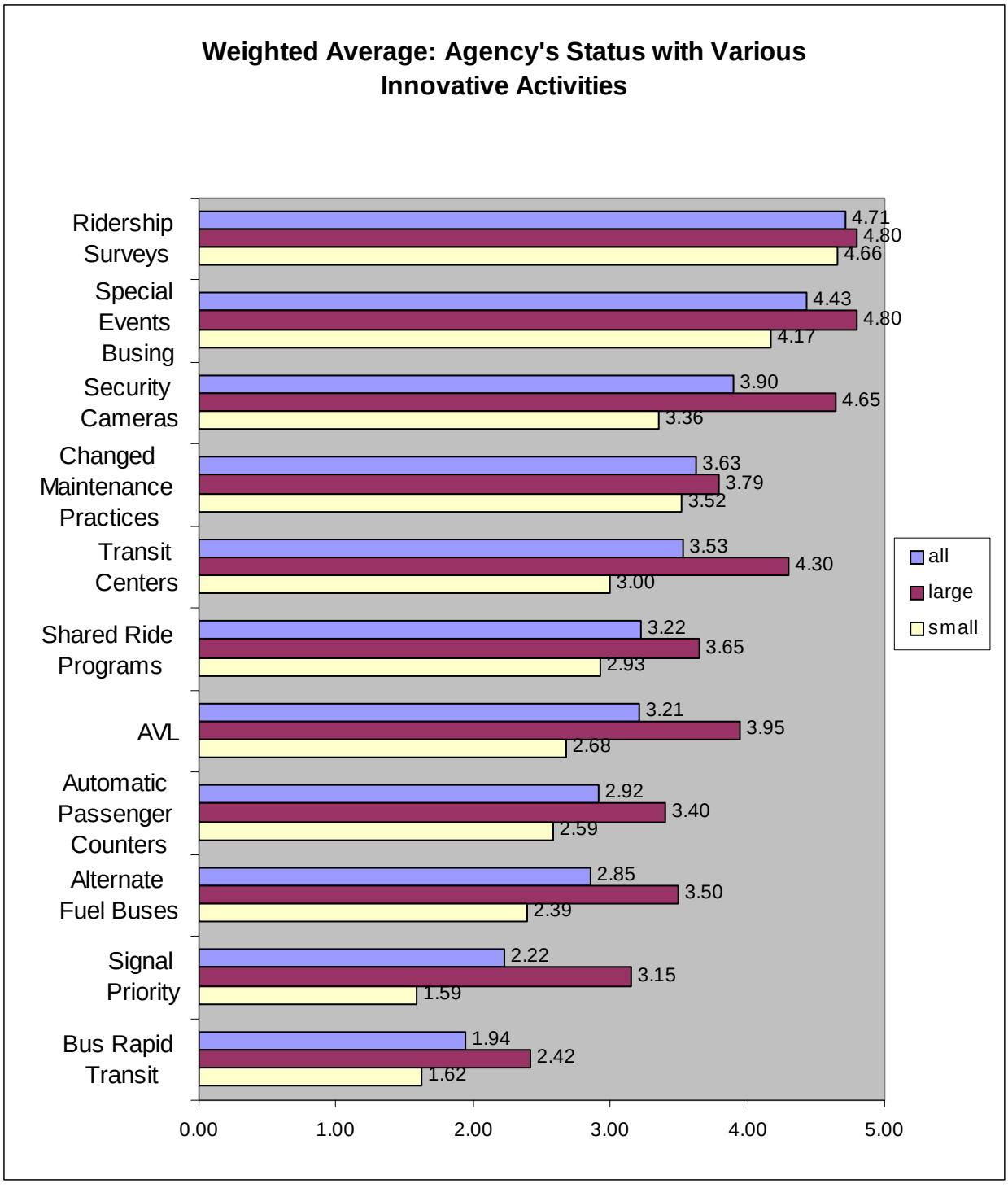

FIGURE 3 Weighted average – Agency's status with various innovations.

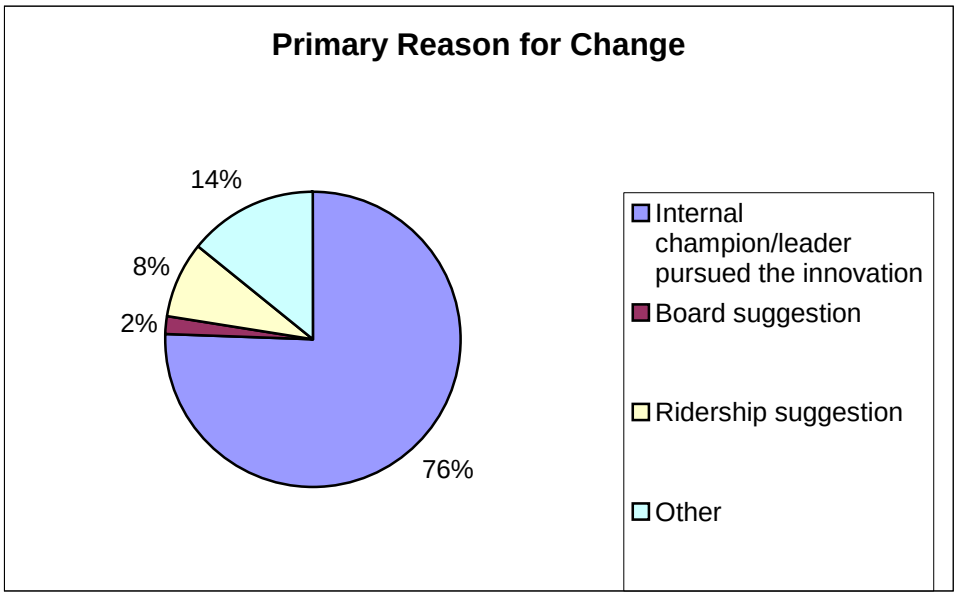

FIGURE 4 Primary reason for change.

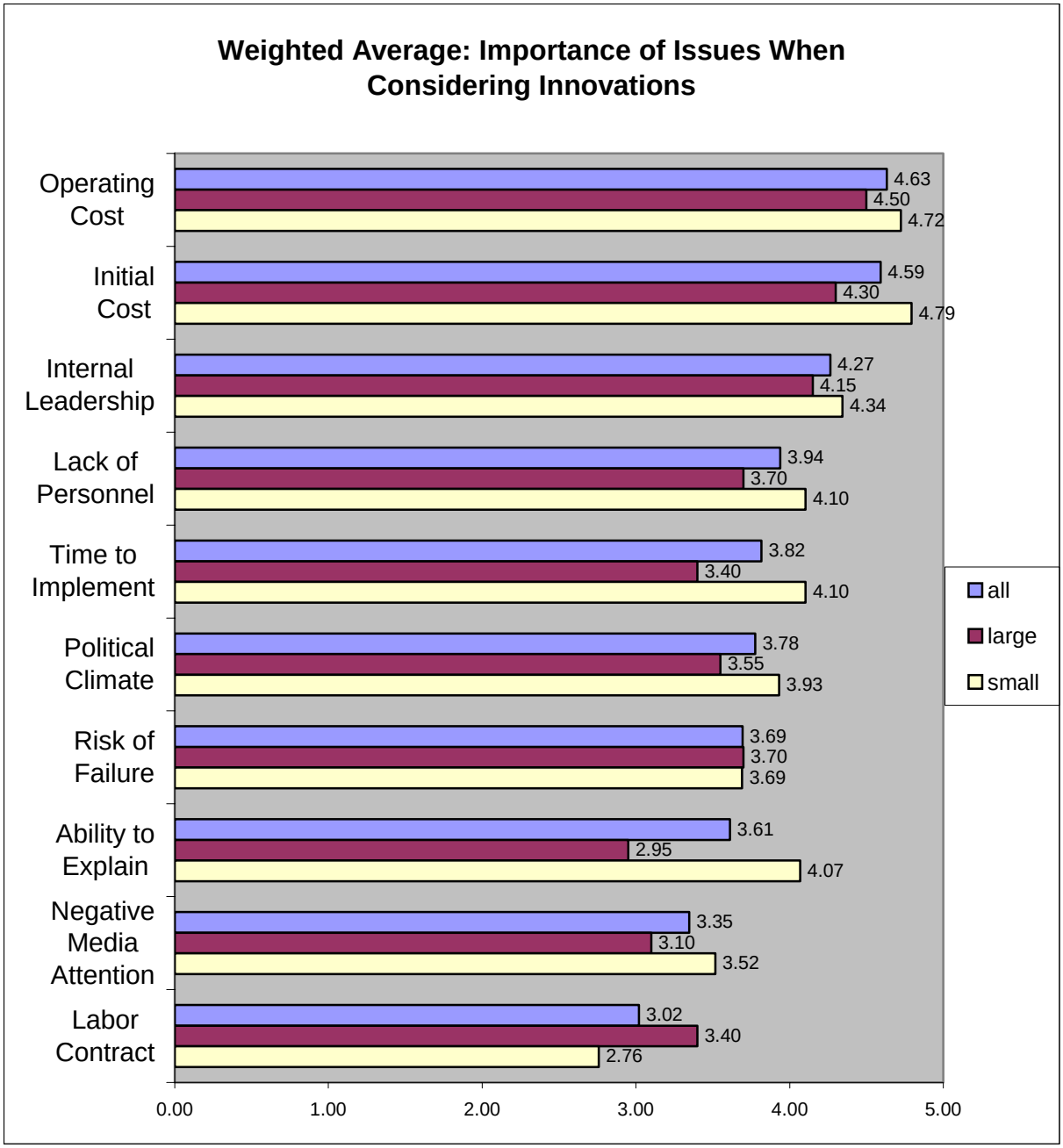

FIGURE 5 Weighted average – Issues when considering an innovation.