

ORGANIZATIONAL SERVICE INNOVATION: THE CASE OF THE RENSSELAER SATELLITE VIDEO PROGRAM AT THE RENSSELAER POLYTECHNIC INSTITUTE*

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ABSTRACT

The objective of this study is to develop a model for organizational service innovation success by exploring in detail the reasons behind the success of an organizational service innovation. Since prior researchers on organizational innovation have approached the issue from the purpose of adoption, change, and incremental new service development, it is difficult to extend their conclusions for organizational service innovations because of the contextual differences in these three lines of research. The unique attribute of this study is that it considers a new-to-the-world innovation. The Rensselaer Satellite Video Program (RSVP) of the Rensselaer Polytechnic Institute (RPI) is a distance education program for working professionals. It was set up as a transparent organization within RPI to handle all of the needs and wishes of distance students and corporate customers. The study combines multiple data collection methods such as interviews and archival sources because multiple data collection techniques make the triangulation possible to provide strong conclusions. Designed and tested before the interviews, a case study protocol with open-ended questions was used during interviews. The results of the study indicate that there are four major dimensions for the success of organizational service innovations. Each dimension is explained and theoretical and practical implications as well as future research directions are discussed.

Key words: organization, innovation, service, distance learning.

ÖRGÜTSEL HİZMET İNOVASYONU: RENSSELAER POLİTEKNİK ENSTİTÜSÜ'NÜN RENSSELAER UYDU VIDEO PROGRAMI

ÖZET

Bu çalışmanın amacı, başarılı bir örgütsel hizmet inovasyonunun arkasında yatan sebepleri detaylı bir şekilde keşfetmek suretiyle bir örgütsel hizmet inovasyonu başarı modeli geliştirmektir. Örgütsel inovasyon konusunu irdeleyen önceki araştırmacılar, konuya, adaptasyon, değişim, ve adım adım yeni hizmet geliştirme açısından yaklaşmışlardır. Bu üç çalışma alanındaki kontekst'e ait farklılıklar nedeniyle, bu araştırmacıların sonuçlarını örgütsel hizmet inovasyonlarını içerecek şekilde genişletmek zordur. Bu araştırmanın özgün yönü, "dünyada ilk" türü inovasyonu göz önüne almasıdır. Rensselaer Politeknik Enstitüsü'nün Rensselaer Uydu Video Programı, çalışan

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profesyoneller için bir uzaktan eğitim programıdır. Uzaktan eğitim alan öğrencilerin ve müşteri şirketlerin bütün dileklerini ve ihtiyaçlarını karşılamak üzere Rensselaer Politeknik Enstitüsü'nün içerisinde şeffaf örgüt olarak kurulmuştur. Çalışma, çoklu veri toplama tekniğinin güçlü sonuçlara ulaşmak için üçgenlemeyi mümkün hale getirmesi sebebiyle, görüşme ve arşiv kaynakları gibi çoklu veri toplama tekniğini kullanmaktadır. Görüşmeler sırasında, önceden tasarlanan ve test edilen, açık uçlu soruları içeren olay çalışması protokolü kullanılmıştır. Çalışmanın sonuçları, örgütsel hizmet inovasyonlarının başarısı için dört ana boyut olduğunu göstermektedir. Her boyut açıklanarak, teorik ve uygulamaya yönelik anlamlarla beraber geleceğe yönelik araştırma yönleri tartışılmıştır.

Anahtar kelimeler: *örgüt, inovasyon, hizmet, uzaktan eğitim.*

Organizational innovation largely has been investigated from the adoption and change perspectives, in the works of Daft (1978), Damanpour (1991), Damanpour and Evan (1984), Ettlle (1983), and Robey and Sales (1994). Once the success of an innovation is assured, it is then diffused, adopted, or imitated by other organizations. For this reason, the literature on adoption and change focuses on how an innovation, if successful, can be adopted effectively, what functions different constituents perform in the due process to make the change and adoption successful, and finally what the best organizational characteristics are for the adoption and change to be successful.

On the other hand, the new service development literature has investigated new service development activities, incremental in nature, to unveil the reasons for the success of new service introductions in the light of different characteristics of services. Cowell (1988:296) pointed out that “there are a number of issues which are distinctive to services and that the area of new service development has been relatively neglected.” Since then, there has been progress in the services literature in determining the reasons behind the success or failure of new service introductions (Easingwood and Storey, 1991; Edget and Jones, 1991; Edget and Parkinson, 1994; Edvardson et al., 1995; Evangelista and Sirilli, 1995; Storey and Easingwood, 1998; Martin and Horne, 1993; Martin and Horne, 1995; Meyer and DeTore, 1999). As a result, prior organizational innovation research took the adoption and change perspective in understanding organizational innovation and prior service innovation research considered only new service product introductions but omitted service innovations taking place at the organizational level. The contextual differences in the three streams of research inhibit the application of their findings in the understanding of organizational service innovations.

The purpose of this study is to develop a conceptual model for organizational service innovation success by exploring the reasons for the success of a unique distance education program, the Rensselaer Satellite Video Program (RSVP), defined and discussed below as an organizational service innovation. Adopting a case study method, the study explores the role of management, the service innovation process, and different service characteristics. It also explores the details of each role to reveal the impact of contextual differences between the new service developments and organizational service innovations. Furthermore, this study explores the criteria for success exercised by the Rensselaer Polytechnic Institute (RPI) in evaluating the success of its organizational service innovation.

The first section of this article presents the theoretical background of organizational innovation and new service development. The preliminary framework for organizational service innovation success is then developed. Next, the research method, followed by a discussion of case-study results is explained. Finally, the paper concludes with the theoretical and practical implications of the study as well as directions for future research.

THEORETICAL BACKGROUND

Organizational Innovation

The concept of innovation is defined in many different ways depending upon the field of inquiry. The change literature of organizations, for instance, defines organizational innovation as “any change that is new to the adopting organization” (Robey and Sales, 1994:407). According to this field of inquiry, change is a broad concept that includes innovation. The adoption literature of organizations, on the other hand, defines innovation as “adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization” (Damanpour, 1991:556). Organizational innovation is “the adoption of a new idea or behavior by an organization” (Daft, 1978:197). A common characteristic of the previous definitions of innovation of the two different streams of research is that as long as something is “new” to the adopting organization, it is considered to be an innovation. The present paper considers only new-to-the-world-innovations, not the adoption and change part of the issue. However, the assumption behind this paper is that since the change and adoption literatures of innovation are broader, including innovation, the findings of these fields of inquiry are in some ways related to the present study. A review of the findings of the different fields of organizational innovation research provides some insight into the determining factors for the success of organizational innovations.

Damanpour (1991) revealed that some organizational factors positively contribute to the success of organizational innovations and that manufacturing and service distinction are “needed for developing empirically distinguishable theories of innovation” (Damanpour, 1991:575). Daft (1978) explored the early stages in the adoption of innovations and revealed that innovative ideas come from two levels, administrative ideas mainly from upper-levels of management and technical ideas mainly from technical experts. The implication of this finding is that administrative innovations require the support of formal power, especially from top managers, while technical innovations require the creative mind of professional employees to solve the problems in the adoption of technical innovations. Top managers are major conflict settlers and the exercise of power by these managers helps in many ways to overcome resistance arising from internal resources (Robey and Sales, 1994). Ettlie (1983:33) argued that “the involvement of top management in marketing innovative products can reduce the risk barriers of adoption, integrate marketing and technical efforts, and increase the probability of success of a new venture by insuring concentration of the most skilled personnel in the innovative effort.” However, this proposition was only moderately supported by the results of his study.

New Service Development

New service development studies, which include incremental new service product and process developments, have revealed some factors that prominently distinguish successful new services from unsuccessful ones. Easingwood and Storey (1991), for instance, revealed four factors that are highly correlated with new service success. These are overall quality, differentiated product, product fit and internal marketing, and use of technology. Edget and Parkinson (1994) also found that organizational, market research, market synergy, business financial analysis, launch effectiveness, formalization, market potential, and design testing were major determinants of success for new service introductions. Martin and Horne (1994) identified four factors that distinguished the most successful

new services from their least successful counterparts. These are inputs provided by senior management and company personnel, input from customers, and the utilization of the customer information during the service development process. Edget and Jones (1991) revealed nine essential factors for the success of a new service product. These are adequate financial resources for market research, a clear definition of the target market, a successful new product development process, a zealous new product development manager, high personal contact, a product champion, a strong launch campaign, a differentiated product, and strong commitment of senior management. Easingwood (1986) and de Brentani (1989) investigated the impact of the different service characteristics in developing new services and concluded that these characteristics have an impact on incremental service development efforts.

The criteria for success of new service product innovations discussed in the literature can be grouped as financial, market, differentiation and competitiveness, cost, and opportunity. Financial criteria for success are sales, profit, liquidity, capital structure, etc. (de Brentani, 1991; Meyers et al., 1999; Storey and Easingwood, 1998). Market related criteria utilized include market share (de Brentani, 1991; Storey and Easingwood, 1998), enhanced customer loyalty (Easingwood and Percival, 1990; Meyers et al., 1999; Storey and Easingwood, 1998), increased consumption of existing services (Easingwood and Percival, 1990) and impact on market position. Differentiation and competitiveness related criteria for success are increased image (de Brentani, 1991; Storey and Easingwood, 1998), quality and speed in the production and delivery of service (Storey and Easingwood, 1998), improved competitive standing (de Brentani, 1991), increased quality of service (de Brentani, 1991), reaching distance markets (Easingwood and Percival, 1990; Meyers et al., 1999), better reputation, and higher differentiation. Cost related criteria for success include lowering costs (Story and Easingwood, 1998; de Brentani, 1991) and achieving cost efficiencies (de Brentani, 1991). A service organization may have opportunity-related criteria for success in terms of improving service innovation capability (Easingwood and Percival, 1990), moving a service organization into a new direction (Easingwood and Percival, 1990), and opening up a window of opportunity (Storey and Easingwood, 1998). So, this present study helps to confirm (or disconfirm) the validity of those findings of the new service development literature discussed above in the context of organizational service innovation.

A PRELIMINARY FRAMEWORK OF ORGANIZATIONAL SERVICE INNOVATION SUCCESS

Morone and Berg (1993) found in their study of the management of technology in the service sector that many service organizations lack the research and development (R&D) departments found in many manufacturing organizations. In addition, Sundbo (1997) revealed that R&D departments are rare in service organizations and innovation in services is accepted as a “search-and-learn process” According to Scheuing and Johnson (1989), the marketing department is largely responsible for new-services. Because of the unavailability of formal departments to innovate services in many different service organizations, one needs to explore “who” takes the major responsibility of organizational service innovations and specifically “what” functions are performed by these people. In new incremental service developments, the initiative for a new service may come from the lower levels of an organization. However, when the scale of a major service idea is large and requires the participation of other units, the initiative requires institutional power to initiate an organizational service innovation. This, therefore, requires a major role from the upper levels of management.

Scheuing and Johnson (1989) developed a fifteen-step model of the normative service development process and advocated that the application of the new formal service development process increased the chance of success for a new service. However, we do not know whether the formal application of this new service development process or a similar one is also valid for organizational service innovations, which is much broader than new service product developments, whether it is formally applied by a service organization today, and whether it contributes to the success of an organizational service innovation. In this sense, this study initially assumes that the formal use of the same or a similar service innovation process suggested by Scheuing and Johnson (1989) increases the chance for success of the organizational service innovation considered in this study.

Services have some unique characteristics that require attention in innovating services. These distinctive characteristics are co-production (simultaneous production and consumption), heterogeneity, intangibility, and perishability. Services are produced and consumed simultaneously (Britran and Lojo, 1993; Fitzsimmons and Fitzsimmons, 1998; Gummenson, 1981; Lynn 1987; Sasser et al., 1978). Since a customer interacts with this service process, the quality of the service as perceived by the customer during the interaction has the potential to make an organizational innovation a success or a failure. The implication of this for organizational service innovation is that during the innovation process the service organization and its sub-systems should be designed in such a way that they meet customer expectations and requirements.

Heterogeneity means that the variability of the process and customer experience with the service is higher than that of the process and customer experience with goods (Atuahene-Gima, 1996; Britran and Lojo, 1993; Fitzsimmons and Fitzsimmons, 1998). This may cause a service to be perceived as unreliable, risky, and slow for adoption, while it provides opportunities for customized services (Shostack, 1984). A standardized service is a solution to decrease customer uncertainty about the service (Levitt, 1976; Maister and Lovelock, 1982). The implication of heterogeneity for organizational service innovation is that during the service innovation process some processes of the organization created to provide a new service must be standardized, and employees contacting with customers must be trained to furnish a less variant service. Recent developments in information technology afford unique opportunities in offering such a less variant service.

Services are intangible (Fitzsimmons and Fitzsimmons, 1998; Gronroos, 1990; Mills and Magulies, 1980; Quinn et al., 1987; and Sasser et al., 1978). It is difficult to touch a service or test its performance before the purchase, but rather experiment with it. Imitation is common in services because it is very difficult for service organizations to patent their service innovations. The implication of this for organizational service innovation is that instilling a service process that makes the service process less imitable by using information technology and providing unique service attributes to customers to make the service less intangible makes the innovation stand long and robust.

Unlike manufactured goods, services are perishable commodities (Atuahene-Gima, 1996; Britran and Lojo, 1993; Fitzsimmons and Fitzsimmons, 1998). When the service provider is ready to serve but the customer is not available to purchase the service, the opportunity is lost forever for the service provider. On the contrary, during rush hours a service customer might have to wait for an extended period of time to get the service. The major issue related to the perishability characteristic of services is that the attributes to match supply and demand need to be implanted to service innovations during

the service innovation process. The objective of doing this is to minimize customer-waiting time during the first years of the service introduction. A failure to do so will cause the customer to perceive a service organization and its services as unqualified.

These different characteristics of services put exceptional challenge on managers in the service innovation process (Atuahene-Gima, 1996; Shostack, 1984; Venkatraman and Prescott, 1990). Therefore, it is necessary to evaluate the effects of these different service characteristics in the organizational service innovation context. With these in mind, this study initially assumed that, at the aggregate level, the issues related to management, the availability of a formal service innovation process, and explicit consideration of different service characteristics in designing a service organization play a role in the success of the RSVP organizational service innovation. Moreover, it also assumed that the case study would reveal sub-dimensions under each aggregate level throughout the exploratory case study. This approach is consistent with what Eisenhardt (1989:536) suggests for case study research:

Investigators should formulate a research problem and possibly specify some potentially important variables, with some reference to extant literature. However, they should avoid thinking about specific relationships between variables and theories as much as possible, especially at the outset of the process.

RESEARCH METHOD

This exploratory study inquires into the reasons for the success of an organizational service innovation, RSVP of RPI, by using a case study research method. The study needed to be exploratory since "there are no models or methods that can be learned from books, courses, or consultants since management of innovation in services is an undeveloped field" (Sundbo, 1997:432). Because very limited empirical research in the area of organizational service innovation has been conducted, a qualitative case study methodology (Yin, 1994) has been utilized to execute this research in order to gain an in-depth understanding of a successful organizational service innovation, RSVP. The study chose RPI's RSVP as a case study because, as suggested by Yin (1994), it was a successful organizational service innovation; the service organization, RPI, was a respected one in graduate as well as undergraduate education; and the data from the service organization was to be easily collected. The study combined multiple data collection methods such as interviews and archival sources, such as initial agreement with IBM, the business case prepared for the approval of the president of RPI, the detailed graphs of how the technical part would work, as well as information from the national and local newspapers related to the RSVP, because multiple data collection techniques made the triangulation possible to provide strong conclusions. The unit of analysis for the study was a service organization that had a successful organizational service innovation along with successful service product innovations.

A case study protocol⁽¹⁾ including 66 open-ended questions was developed to conduct interviews with the people most knowledgeable about RSVP. These people were Dr. William Jennings (Vice Provost of Professional & Distance Education) and Sue (Susan) Bray (Assistant Dean for Strategy and Development). The case study protocol guided the researcher in conducting the case study and

increased the reliability of the study to minimize errors and biases. The interviews with these people lasted six hours (four hours with Dr. Jennings and two hours with Sue Bray) between the dates of February 8, 2000 and February 18, 2000. The same 66 open-ended questions were asked to both of these people to capture the details from different points of view. After permission was obtained from the interviewees, the interviews were recorded so that the investigator would benefit from it in writing up RSVP case study. During the data analysis, the key informants were given the chance to review a draft of the case study report. In addition, during the data analysis, this study did not have to be concerned with internal validity since this is an exploratory case study, not an explanatory one.

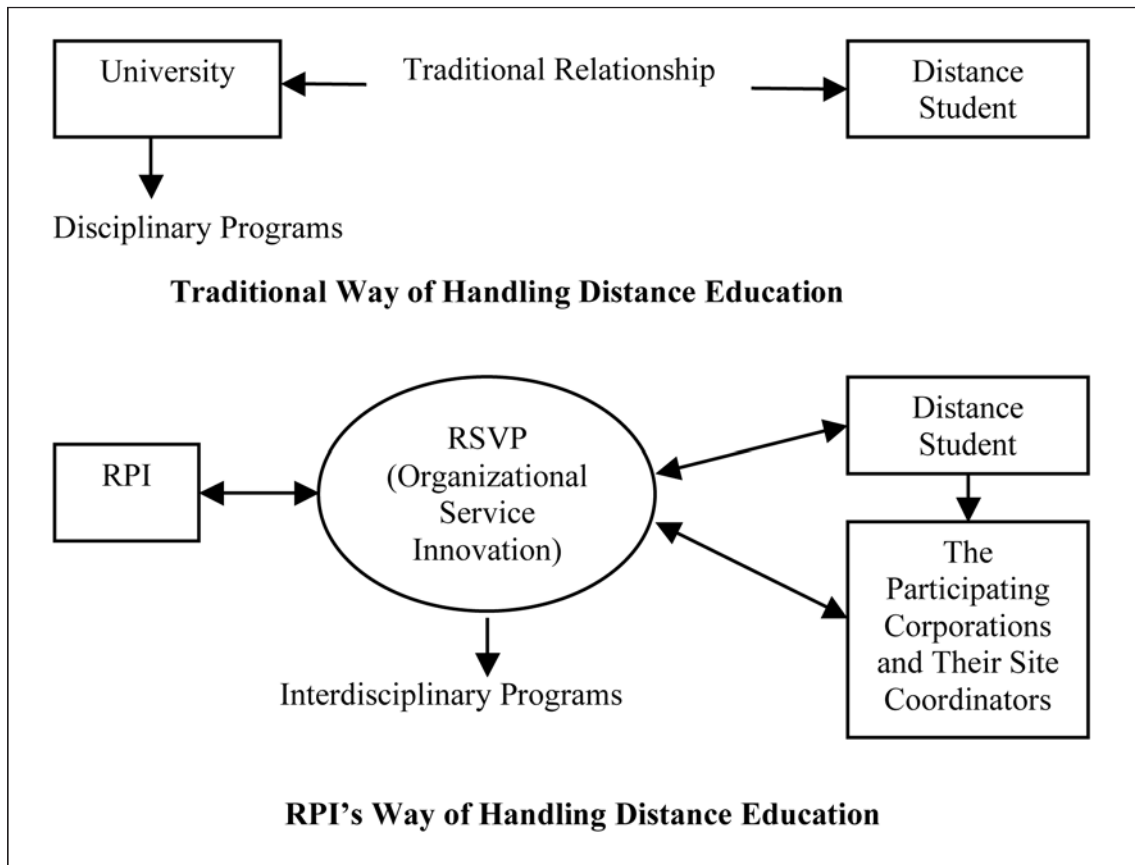
Service Innovations Considered for the Study

A service can be defined as “any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product” (Kotler and Bloom, 1984:147; Kotler, 1994:464). The core service of RSVP is to provide graduate level degree and certificate programs for working professionals of participating companies operating in many different parts of North America through a variety of available technologies, such as satellite, video, and the Internet. RSVP has been so successful that the US Distance Learning Association named RSVP the Best Distance Learning Program in Higher Education in 1994 and recognized RSVP for its partnership with General Motors in the delivery of a Master of Science (MS) program in the management of technology in 1996. Some of the customers of RSVP are General Electric (GE), General Motors (GM), IBM, and Ford.

In very broad terms “innovation is the introduction of something new” (Davenport, 1993:10). In the light of this definition, this study defines RSVP as an organizational service innovation since it provides a revolutionary approach in serving distance students by creating a unique transparent organization within RPI to handle all of the needs and wishes of the distance students and corporate customers as well as those of the participating faculty members at RPI. This type of an organization had not been previously innovated by other schools to handle distance education. Figure 1 below depicts what was organizationally radical with RSVP and the programs it provided. In a traditional approach, a distance student was supposed to interact with the university directly (the upper part in the figure). However, RSVP was created as a transparent organization within RPI to handle the demands and problems of distance students and corporate customers (the lower part in the figure). A distance student or corporate customer did not have to interact separately with the registration, admissions, or registrar at RPI, but only with RSVP for all of his/her issues. The rationale of defining RSVP as an organizational service innovation is that this type of an organization to handle the distance students was completely new to the world.

Schumpeter’s (1934:66) definition of innovation is more specific and includes one important element for this study’s purposes. He defines innovation as “the introduction of a new good- that is one with which consumers are not yet familiar – or of a new quality of a good.” Since this study considers services, not goods, we can easily substitute service for goods in the definition. This study then defines the interdisciplinary programs of RSVP as service product innovations since these interdisciplinary programs were for the first time designed for working professionals. The universities in the distance education business, such as Stanford, were offering regular disciplinary programs such as Industrial Engineering, Electrical Engineering. An interdisciplinary program concept was completely new to the working professional.

Figure 1
Traditional versus RPI's Way of Handling Distance Education



CASE STUDY RESULTS

In this section, case study results are presented with respect to the (1) service innovation process, (2) issues about the top management, (3) issues about the service innovation process, (4) issues about the nature of services, and (5) the performance of RSVP organizational service innovation. To make the following discussion clearer, it is necessary to mention at this point that the organization of the titles is a result of the study.

THE SERVICE INNOVATION PROCESS

Idea generation and idea screening. The whole concept and idea of RSVP started during a 1986 meeting at which the president of RPI, Daniel Berg, and visitors from IBM came to discuss the educational needs of IBM employees. One of the key visitors, Paul Low, a trustee with RPI and Vice President of IBM, was interested in getting Rensselaer Polytechnic Institute interested in providing education to the IBM people in the Hudson Valley. This was the starting point of a market-pull organizational service innovation for RPI. The first proposal from IBM was basically to have RPI send its faculty members down to Poughkeepsie, Kingston, Fishkill, and Burlington to deliver graduate programs live on each participating IBM site.

Concept development. During a top level meeting to evaluate the proposal of IBM, President Berg, Provost Gary Judd, and the dean of the graduate school, Dr. Jennings, decided to use technology to provide services instead of using the highway. Providing graduate level education to the IBM sites using the highway would decrease the time each of the faculty members could spend on campus. This in turn would decrease the effectiveness of the faculty members, which would have a negative impact on RPI's overall image. As a result of the meeting, it was decided that RPI was to develop an organization that could provide graduate level education to the IBM sites. In addition, RPI was to build a model that would be used to expand to other industries.

Concept testing. IBM's response was so favorable that they encouraged RPI to develop a proposal to deliver courses using technology rather than sending faculty members to each site. Since at this point in time the primary buyer of the service was the corporate IBM, the concept testing occurred at this level. It was very successful because IBM supported the concept of providing graduate education using technology.

Business analysis. Dr. Jennings worked on a full business case to estimate what the up front capital investment and the operating expenses would be so as to decide on the tuition charges. RSVP took the size of the program that it was going to plan for IBM and estimated its operating costs. This activity was performed in order to decide on the appropriate tuition charges to be imposed on IBM. Rivals, such as Stanford, were charging 200% of their campus tuition, some other universities were charging 100%, while others were charging some sort of premium. This comparative research on the tuition charges helped RSVP put its charge for tuition at 150% of RPI's on-campus tuition. The business case was approved by President Berg, and later on supported by acting president Stanley Landgraf.

Project authorization. The hardest part of the negotiation was getting a guarantee to those numbers of students from IBM (Dr. W. Jennings, personal communication, February 8, 2000). At first, IBM approved the whole program (authorized the project), but did not give any guarantee. Paul Low, later on, provided a guarantee of registration of 240 students per semester by IBM because RPI did not want to go ahead and make an investment without the guarantee (Dr. W. Jennings, personal communication, February 8, 2000). According to the agreement, each individual IBM site would pay for their actual cost (the actual number of student registration), and then RSVP would look at the difference between the total registration and 240 and send IBM a bill for the difference. Paul Low was the person who would pay the bill. This guarantee agreement was valid for only three years.

Service design and testing, and process and system design and testing. Technology and market considerations in addition to the communications with the customer, IBM, and with the RPI faculty constituted the main inputs to service product and process innovations since the communications revealed what IBM needed and RPI could offer. The program of Manufacturing Systems was a result of those communications. The technology and market considerations helped to decide on the structure of the service process to meet the needs of the customer. The first semester RSVP would offer three courses that were accepted as a form of product testing. In discussing service design and testing, Dr. Jennings says,

We had a couple of meetings with IBMers to talk about what would be the educational programs that they would benefit most from. And that led to

our proposing what we thought was the best match between their needs and what we could offer a program in Manufacturing System Engineering. That was what they felt they needed... A new approach in those days. At other schools, the distance people just handled the technology, they did not really act as the main buffer between the faculty and the student, and everything went to the academic departments. And most schools had tremendous problems with that... So today, everybody does that and that seems like an obvious way of doing it, but when we got into the business that was a radical concept. Nobody put in place a service organization the way we did... and this has been a key trigger of success for RSVP (personal communication, February 18, 2000).

Full-scale launch. The introduction of this service innovation (from the idea generation to the full-scale launch) to IBM sites took less than a year. It is noteworthy to mention that developing such a big organizational service innovation in such a short period of time should be considered important in evaluating the innovative capability of a service organization. The service introduction was performed as a part of the agreement with IBM. In order to announce the program, RSVP would have a series of information sessions at each of the participating IBM sites. Dr. Jennings explains this full-scale service launch activity as,

Service product introduction was a group of us went around to each IBM site, introduced by the general manager of the site to the assembled people and talked about the program and basically encouraged people to apply. That was the service product introduction phase (personal communication, February 18, 2000).

TOP MANAGEMENT ISSUES

Top Management Support

Top management commitment in terms of financial and verbal support. Continuous and explicit support from top management during the service innovation process help break many barriers imposed by a service organization to innovate. The support may take many forms depending upon the need, such as financial support to initiate the process of service innovation or verbal support for the middle level managers. Financial support is considered a hygiene factor (a necessary condition) but may not be enough to make an organizational service innovation successful. Verbal support from top management is a motivating factor that complements financial support to innovate services. Dr. Jennings emphasizes this verbal support of RPI's top management by saying that,

As soon as we came to an agreement with IBM, the President and Provost began to mention in all their public addresses that we were in the continuing education business. We were going to do it through distance learning. They continued to talk about how important it was to the future of Rensselaer to get involved with this type of educational delivery. So to me what I call the moral support that I got from those early presidents was

crucial to our success. Money helped, but I could have borrowed from some other places but to actually say in their public speeches that this was an important strategic initiative of Rensselaer was crucial to our success (personal communication, February 15, 2000).

Top management commitment in terms of understanding the customers' perspective and communicating it to key people in the organization. Understanding the totality of the service offering early from the customers' perspective helps a lot in the process of organizational service innovation. This understanding is used as input in designing a service organization and its sub-systems aligned accordingly with the customer needs and wishes. "President Berg and acting provost Gary Judd at that time understood what customer was looking for," says Dr. Jennings (personal communication, February 15, 2000). This understanding is important in two respects. First, this understanding leads all activities of a service innovation process to move in the right direction. It prevents a service organization from making early mistakes in the process of service innovation about customers' expectations and prevents, in turn, financial losses or service failures. Second, it gives a service organization an advantage to service its prospective customers at the right time with the right quality of service. It would prevent image losses unless the service organization met the customers' expectations. Distance learning and working professional concepts were the terms used by both top management and middle management at the inception. These concepts later on helped mid-level managers to define the market as "educating working professionals with distance learning by offering interdisciplinary programs."

Top management commitment in terms of providing cooperation and coordination among different departments. Top management needs to stimulate coordination and cooperation among the different functional departments in the service innovation process. Provost Meindl achieved this role by making it very clear to the deans of management, science, and engineering that distance education was an important strategic direction to follow and they needed help (Dr. W. Jennings, personal communication, February 15, 2000). Top management coordination and cooperation was important since the service product innovation, Manufacturing Systems Engineering, was an interdisciplinary program that required participation and support from different departments (S. Bray, personal communication, February 9, 2000). This clear communication helped to get the support of the deans, who felt that it was a right thing to help and encouraged faculty members to participate.

Resourcing and Financing of RSVP

Financial flexibility. RPI decided that RSVP would be managed as a separate business unit initially, financially independent of the other units of the university (Dr. W. Jennings, personal communication, February 8, 2000). This meant that the income generated by RSVP would not be used to support the other schools at RPI, but only RSVP, and that the university would not keep any of the tuition income. Managing RSVP as a financially separate business unit provided flexibility in making financial decisions, which, in turn, aided RSVP to cope with its rivals better in the market place, to experiment with emerging technologies for distance learning, to buy whatever was needed to get the quality of the program up, and to serve customers better by hiring more teaching assistants, for instance. The competitors in the market did not have that flexibility (Dr. W. Jennings, personal communication, February 18, 2000). Dr. Jennings emphasizes this by saying,

We were running it as a separate business unit within the university. That policy decision I think was instrumental in our success because the culture of our whole organization has always been that of running a business... We had a lot of financial flexibility in the beginning... And it was instrumental to our success (personal communication, February 8, 2000).

Customer commitment. Financial and non-financial aid from customers provides valuable input. IBM, for instance, provided resources in the form of tuition guarantees in the first three years (Dr. W. Jennings, personal communication, February 8, 2000; and S. Bray, personal communication, February 9, 2000). A small amount of money provided by participating companies for curriculum development also provided a valuable input that increased collaboration and cooperation between service organization and customer. IBM provided a lot of moral support as well as financial support at the beginning (Dr. W. Jennings, personal communication, February 18, 2000). It also played a major role in introducing this service innovation to its own employees by convincing them to participate in the program (Dr. W. Jennings, personal communication, February 18, 2000). “Without that help we would not have had that impact that we have on IBM,” says Dr. Jennings (personal communication, February 18, 2000). Interaction with the technical education program at General Motors (GM) provided new opportunities such as by making RSVP a key part of their education program and getting it involved with all of the new opportunities within GM (Dr. W. Jennings, personal communication, February 18, 2000). Corporate customers provided input from the corporate viewpoint on what the current developments in the field (S. Bray, personal communication, February 9, 2000). Students of RSVP as a resource have shaped the content and delivery of courses by providing valuable insights in the form of their experiences (Dr. W. Jennings, personal communication, February 18, 2000). These insights, in turn, contributed to the faculty members modifying their courses and the RPI to realigning RSVP’s organization to providing better services to the students and corporate customers.

Coping with the Resistance of Human Resources

The quality and quantity of human resources that are provided by a service organization to innovate services influence its success or failure. To provide such human resource quality and quantity, a service organization needs simultaneously to attract the attention of its human resources and cope with obstacles and resistance raised by its human resources very well. These obstacles and resistance are very different for the parties involved. In the case of RSVP, there were some skeptics among faculty members who questioned whether distance education was a right direction to follow (Dr. W. Jennings, personal communication, February 15, 2000). The major argument of the skeptics was that distance learning somehow was affecting RPI’s education negatively and straining faculty resources too much (S. Bray, personal communication, February 15, 2000). One reason for such skepticism had something to do with the newness of distance education. Another resisting group was the other units at the university, such as admissions, registration, and billing functions, due to the fact that RSVP would be handling those functions that are typically done by other units of RPI for its off-campus students. Another obstacle was the hiring for a completely new industry, distance education, because there was hardly anybody with enough experience.

Since resistance is different for each party, solutions to this resistance may take many forms. Finding and convincing key people among faculty members and departments to participate in a service

innovation might be a starting point. This was what happened in the case of RSVP. Dr. Jennings discusses the contribution of these early participant key people:

From the academic side, I was fortunate that small a group of faculty were particularly interested in the manufacturing area that was willing to support and get involved with this. That included the key people like Gene Simons, John Wilkinson, who was teaching in the statistics area at that time, and some of the faculty in human resources and the organizational behavior area within the School of Management and some key faculty in Mechanical Engineering. Those are some of the early faculty who happened to be involved with programs involving Manufacturing Systems Engineering and those faculty were both willing to help us develop what the curriculum should be and actually volunteered their services to offer some of the first courses. But there were many folks within the general faculty who felt that this was not something that they should get involved with at all and we had to work very hard at encouraging more faculty to participate (personal communication, February 18, 2000).

Incentives, financial and non-financial, help to foster the participation of key people in whole service innovation. Supplemental compensation as a financial incentive, in addition to regular compensation, was an important inducement provided to faculty members to encourage their participation. In addition, extra teaching assistants as a non-financial incentive were provided to those participating faculty members to support their graduate research. These incentives can also be thought of as a way to internally market the program. Many of RSVP's rivals have started applying this model of incentive (Dr. W. Jennings, personal communication, February 18, 2000) to convince their faculty members to participate in their distance education programs.

A final area of resistance of the faculty members was related to using videotape as a delivery medium. If RPI wanted to reuse those tapes over and over again, they feared losing their jobs. To overcome this resistance, RSVP made a conscious business decision at the inception not to reuse tapes any more than possible (Dr. W. Jennings, personal communication, February 8, 2000). So RSVP rarely, if ever, reuses video tapes. Now RSVP does the equivalent of video in a digital format that continues to allow RSVP to overcome the perishability of the service. It provides convenience to a student who misses a class on campus or an off-campus student that wants to get the class in a digital file at a convenient time. At the end of semester, videotapes and digital files are erased.

ISSUES ABOUT THE SERVICE INNOVATION PROCESS

Issues about the service innovation process are ones that need to be attended to during the service innovation process to make the organization and service more sound and perceptive to potential customers, to understand the realities of the market, and finally to implant competitive advantage to the organization that is supposed to provide unique service to customers. The reason these were not listed under the previous "issues about the top management" heading is that these factors require the technical expertise of mid-level managers that in many cases top managers lack.

Tools and Technology

Technology selection for flexibility. Technological considerations must be attended to in the early stages of the process of service innovation. There are two important points related to technology

selection that need to be considered seriously. The first is related to the flexibility of technology for the future service expansion. Following the rivals' strategy and using a dedicated T1 pipe would limit the scope of operations and, in turn, limit the geographical market. The dedicated line also would require new investment at each new customer addition. Selection of the satellite, although more expensive as a delivery medium technology, gave RSVP the opportunity to expand across the whole North American continent very rapidly (Dr. W. Jennings, personal communication, February 15, 2000; and S. Bray, personal communication, February 9, 2000). In satellite broadcasting, the options were to use either a satellite or a microwave transmission. Most of the universities in the distance education business were using microwave transmission (Dr. W. Jennings, personal communication, February 18, 2000). The biggest competitor of RSVP, then Stanford, set up stations on the mountains of Palo Alto to cover all Silicon Valley with microwaves. A microwave-receiving antenna was required to get service from Stanford.

Was it the right technology for RSVP? Dr. Jennings answers this question:

We spent a lot of time trying to understand whether that was the right technology for us. A couple of things led us away from that. One was, we could not have actually a good line of sight between here and Poughkeepsie. We had to go up and bounce off to come down. It is not a straight line of sight, too many hills in the way. And second, we rarely said we do not want just survive the end, we just want to get the rest of the country. And if we used microwave, we were only limited to a much shorter travel distance. You can't go more than about a hundred miles or so. So for those we did a fair amount of thinking over those few months about which technology we would use and we chose satellite technology (personal communication, February 8, 2000).

Technology selection for quality. The second is related to the service quality provided by the service delivery technology. In order to outperform rivals in the marketplace, a service organization's technology needs to provide reliable, accurate, and timely service to their customers. Satellite would allow live and interactive classes. It could also allow RSVP to put a higher quality video into the corporate classroom. Technology helped and allowed RSVP to be interactive. It meant that the student could participate live in class by calling and asking the professor questions live. These live and interactive classes increased the tangibility of the service. Sue Bray, in discussing the importance of reliability, accuracy, and timely service provided by the satellite technology, says,

Satellite delivery made not just for accuracy but exact replication of the original experience. So it is very accurate. It was as reliable as the faculty member showing up to class. Because if the faculty were there, we would broadcast it. There were really times we were unable to broadcast for one reason or another... So I would say that even with the bumps of start up this would still be considered very reliable. It was being delivered as it happens. So you cannot get much more timely than that. There were some other schools like Columbia at that time trying to deliver courses to some IBM sites as we did. And they were using microwave transmission and it was not

nearly as clear an image, it was not as reliable. So our choice of satellite will not only to be helpful for the future but it paid off in terms of our initial customer, that is IBM (S. Bray, personal communication, February 9, 2000).

Providing quality technical activities has the potential to make a service be perceived as unique. Technical structure must be well thought out in the process of organizational service innovation. A high value placed on the technical quality in the production has been a part of RSVP's culture from the beginning (Dr. W. Jennings, personal communication, February 8, 2000). Dr. Jennings discusses the importance of quality technical activities as,

We needed to make the technical piece of it at work. Relative to our competition we are pretty good... If the technical part of your program does not work, even if you have the most decent faculty in the world and you do not provide it in a decent way, nobody is going to participate in it (personal communication, February 18, 2000).

Technology observation. Not only is choosing the right technology at the right time important, but also keeping up with technological opportunities is important in order to provide the existing service with better technology in the early years. Keeping a task force to identify possible technological developments for the hope of improving the service provided is important since technological progress provides new opportunities. In a service organization a person or a task force, depending upon the size of the service organization, needs to be assigned formally to watch the technological progress and investigate the opportunities provided by a particular technology. At RSVP's inception this activity was done by a technology person but later on a faculty member was formally assigned to researching advancements in technology for RSVP (Dr. W. Jennings, personal communication, February 18, 2000). Internet technology, for instance, is changing the way that RSVP provides service. Admission, registration, and course administration and almost everything are done over the web rather than on paper.

Market

Growth potential of the market. The realization of the opportunities provided by a prospective customer helps greatly. However, creating demand takes time and requires hard work. At RSVP's inception there was huge growth potential in front, but not high demand. There was growth potential for two reasons (Dr. W. Jennings, personal communication, February 8, 2000). First, nobody was providing distance education (a service innovation opportunity). Second, and maybe more important, was that companies were starting to realize their need of life-long learning. Competition was not available since there were few schools offering distance education. Convincing prospective customers to participate was a necessity at the beginning. Holding a regular program that brought site coordinators to RSVP's main office for a couple of days a year to listen to their needs helped understanding what worked and what did not work in the first years of the organizational service innovation. In addition, the evaluation of professors and courses by the students also provided valuable customer input during the first years. These two mediums aided RSVP to evaluate the organization and services to increase demand at each site.

Clear market definition. A clear market definition is an important input to the process of service innovation. It was decided that RSVP's market would be "serving corporations with master's level programs only." Market definition is a continuous activity for a service organization since market changes require new market definition over time. Technological developments may create new opportunities that may require new market definitions for a specific service innovation. For instance, although the Internet was not around at the inception of RSVP, it provides enormous opportunities today. Seeing the opportunity of the Internet, RSVP has extended its market definition to include corporations and individuals over time (Dr. W. Jennings, personal communication, February 8, 2000).

Differentiating Advantages Built into the Service Organization

The more a service innovation carries an advantage, such as low cost or differentiation, the more likely it is going to be successful. RSVP had two differentiating advantages at its inception, according to Dr. Jennings and Sue Bray (personal communication, February 15, 2000; and personal communication, February 9, 2000, respectively). One was related to its customer focused service approach that its rivals did not mainly use. The second was related to the interdisciplinary products (classes and programs) that it provided to its corporate customers; on the contrary, its rivals were offering regular disciplinary classes that corporations did not want at that time. In addition to these two differentiating advantages, Sue Bray included the history of partnership with industry and a willingness to design and create programs that matched the needs of the industry as the additional differentiating advantages (personal communication, February 9, 2000). In addition to these differentiating advantages, a service organization needs to embed its core competence into its service innovation. Rensselaer has always been known for its technology and management focus. In arguing the contribution of RPI's core competence in technology and management education to RSVP's success, Sue Bray describes it as "the essential reason for success" (personal communication, February 9, 2000). In addition, Dr. Jennings explains it as,

We try to be a mirror of RPI's core competence. And I think that we have done so fairly well and that is where we want to stay in the future. We need to be the way the course strengths of RPI get out the working world. We do not want to be offering our program different from, divorced from, campus. We have got to take the best of the campus and get it out there. So we want to continue to build on the core competence of RPI (personal communication, February 8, 2000).

New advantages for a service innovation need to be added to the available ones in order to stay a step ahead of the competition since imitation takes place very fast in services. In addition to focusing on the customer service and interdisciplinary programs, RSVP has been trying to implement interactive distributed learning that is going to provide a richer, more rewarding learning environment than its rivals.

ISSUES ABOUT THE NATURE OF SERVICES

Co-production. Services are generally rendered when customers are ready. Customers experience both the outcome of a service (getting well-designed, interdisciplinary courses from a well-respected university) and the organization by which this service is produced and delivered. To satisfy the

customer on the outcome side, RSVP considered customer wishes and requirements seriously and embedded them into the organization of RSVP and the program of Manufacturing Systems Engineering. The interdisciplinary programs were so desired in the market that many schools in distance education business have started copying the interdisciplinary program concept from RSVP. To satisfy the customers on the organization by which the service is produced and delivered, satellite technology- the most up-to-date and accurate technology at the inception of RSVP- was chosen, even though it was the most expensive technology so as to provide a quality service. Sending faculty members to each site would decrease the efficiency and capacity of each faculty member to serve corporate customers.

RSVP kept the communication open with the participating corporate partner representatives and held yearly meetings to identify the needs and wishes of the corporate customers. These meetings helped to identify the needs of the corporate customers to make the necessary adjustments in the content and delivery of the programs. RSVP kept communication channels open with the students, too. A student at a participating corporate site had the advantage of calling only a contact person at RSVP to solve his/her registration or bursar problem. Faculty members and teaching assistants (TAs) held regular office hours weekly so that distance students could contact them and ask questions. In addition, RSVP set up faculty and TA visits to the participating corporate sites to increase the communication and to make the service delivery process have the best possible quality.

Heterogeneity. Distance students have different expectations and hence constitute a heterogeneous group. Because the service requires constant input from RSVP personnel, the output and the experience of distance student with the service provided by RSVP could change at each service offering. This variability in services means poor service quality and lack of consistency. RSVP standardized some of its operations to provide a less variant service and communicated it to the corporate customers very successfully. First, it standardized its mail operations by designing this operation as a production facility. Second, it standardized the pages of the distance courses on the web. This did not happen at the inception, but later on. However, it clearly shows that standardization in the operations is continually used to provide a less variant service. Finally, a student information system was designed to standardize the internal student operations. The information system provided timely, accurate, and standard information when required. The advantage of having heterogeneous customers is that the service can be tailored to the specific needs of the customers to create a differentiated service. The customer service approach of RSVP provided such a differentiating advantage.

Intangibility. Attaching a tangible to an organizational service innovation provides a higher degree of success for that specific service innovation. RSVP provided a master's degree, a tangible of an achievement of a working professional even though the corporate customer of RPI, IBM, was not interested in degrees but courses (Dr. W. Jennings, personal communication, February 18, 2000). The working professional could use the tangible to argue a better job within the existing corporation or in other places. Because of the tangibles, the students at the participating corporate sites were more willing to participate in the program.

Distance education, compared to traditional education, is more intangible since the interaction between the faculty members and the students at a distance is less direct. For instance, a distance student might not have a face-to-face communication with a faculty member whenever necessary. RSVP chose satellite technology that provided live and interactive classes to decrease the intangibility of the service. A short introduction prior to each class showing RPI to the distance

students, for instance, was aimed at making the service provided more tangible. From the beginning RSVP also tried to add a human element to its services as much as it could by using faculty and TA visits to the participating corporate sites to increase the interaction and, in turn, the tangibility of the service provided.

Perishability. Fitzsimmons and Fitzsimmons (1998) argued that managers of service organizations who are faced with unstable demand and perishable capacity have options such as appointments, price incentives, and part-time help during peak hours. Perishability is an important characteristic of services and input to the process of service innovation. Relatively few service businesses have the advantage of storing the service for later use on off-peak periods. Using videotapes as the way of preserving the service of a course and reusing it time over time would create problems. Many of RSVP's competitors videotaped a class and used it for five years (Dr. W. Jennings, personal communication, February 18, 2000). Using the same tapes over and over again and charging a high level of tuition would create a more impersonal service between the student and the faculty (Dr. W. Jennings, personal communication, February 18, 2000). Recording a class and putting a videotape of it in the library for students who missed the class decreased the perishability of the service provided for the on-campus and the live-schedule students. Using the videotapes of a class in a semester to serve tape-delayed schedule customers increased the capacity utilization of the courses offered at distance. For instance, GM wanted only the tape-delayed schedule, not the live schedule.

PERFORMANCE OF RSVP

A positive financial return and a positive learning experience of students have been the two main criteria for success for the organizational service innovation considered (Dr. W. Jennings, personal communication, February 18, 2000). Reaching a total number of 600 students in the early years and creating strong relationships with the industry were the other two important performance criteria (Dr. W. Jennings, personal communication, February 18, 2000; and S. Bray, personal communication, February 9, 2000). Finally, a 15 to 20% profit level was officially predetermined for RSVP. These criteria for success were achieved in the early years after the inception of the program.

RSVP's goal has always been to be the biggest provider of graduate level programs (Dr. W. Jennings, personal communication, February 18, 2000). This clearly indicates that the market related performance criterion was available at the inception. It is noteworthy to mention that RSVP increased RPI's market position by attracting more students to the existing classes on its campus as well as enhanced customer loyalty among corporate partners. "We have not had a major customer ever leave us," says Dr. Jennings in discussing how RSVP increased customer loyalty (personal communication, February 18, 2000).

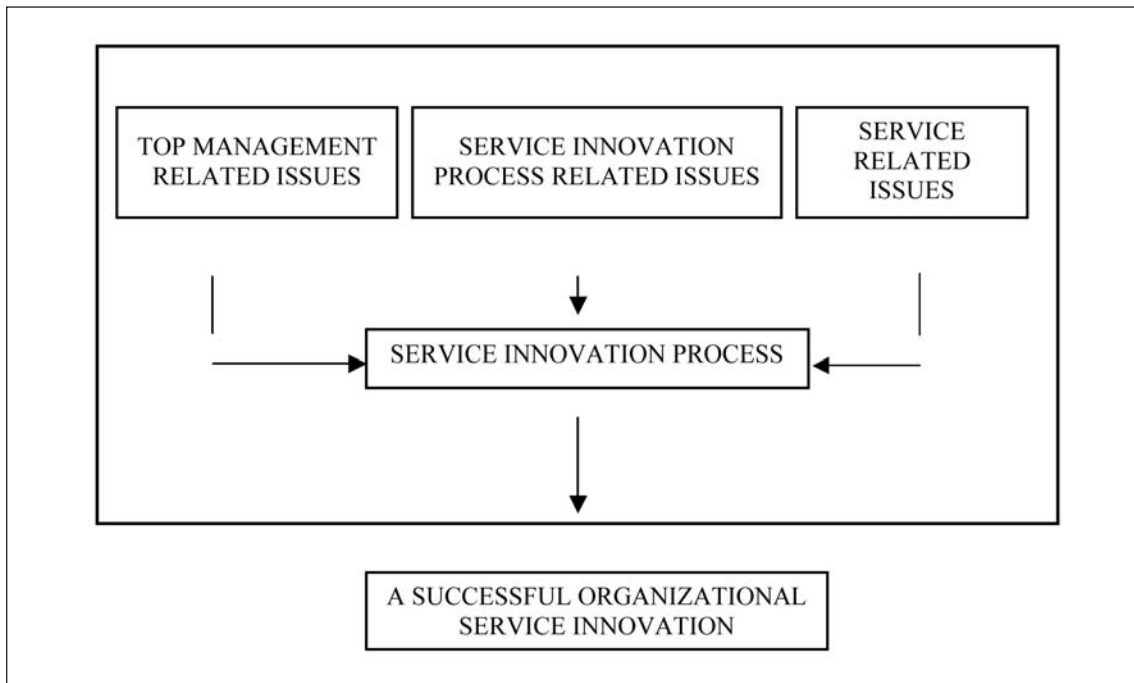
RSVP had three differentiating advantages in terms of the content of its programs, the way it delivered them, and the quality of the service it provided. These three differentiating advantages discussed previously improved RPI's competitive standing, increased its image, provided better reputation, and provided more opportunity to differentiate RPI's services relative to its competitors. In addition, it provided a more sustainable competitive advantage of reaching distance markets, increased quality and speed in the production and delivery of RSVP services, and finally increased

partnership with corporations. However, the differentiation and competitiveness related success criteria were not official success criteria.

The innovative potential of RPI increased since the current corporate customers asked for new interdisciplinary programs. Because of RSVP, these programs will be very easy to deliver. "We innovated RSVP absolutely to move RPI into a new direction. That was very clear to us when we started. It was a direction for Rensselaer's future," says Dr. Jennings (personal communication, February 18, 2000). RSVP opened up a window of opportunity. "It has and continues to open up a window of opportunity. We now can literally talk about taking RPI's programs around the world. We could not talk about that ten years ago," says Dr. Jennings (personal communication, February 18, 2000) in emphasizing the opportunities created by RSVP organizational service innovation. In a couple of years RSVP is going to sign an agreement to provide education to corporations outside the U.S. (Dr. W. Jennings, personal communication, February 18, 2000).

RPI's business portfolio consisted of undergraduate and graduate education prior to this organizational service innovation. From a revenue point of view, the undergraduate education was not providing a positive financial return, and the graduate education was at break even (Dr. W. Jennings, personal communication, February 18, 2000). In addition, there was not a high growth potential in the graduate and the undergraduate business. Expanding on those areas also required a huge financial investment. To continue to be a highly recognized research institute, RPI needed to address the graduate level study and enlarge its programs on the graduate level. Only the working professional market that had a huge growth potential could provide funds to enlarge the graduate level programs. In addition, it did not require a huge investment from RPI to enter into the working professional business. Serving the working professional market that was interested in technological graduate

Figure 2
A Conceptual Model of Organizational Service Innovation Success



education needed to be done at distance since the Capital City area (Albany, NY) where RPI is located did not have adequate corporations to buy the service. The distance business of RPI, thus, could provide a positive cash flow to support and enlarge the graduate research and finance the deficit on the undergraduate education. As expected, the working professional business of RPI provided positive cash flow to fund the deficit on the undergraduate programs and provided funds to enlarge the graduate programs.

The aggregate findings of this study are summarized in a conceptual model in Figure 2.

DISCUSSION AND CONCLUSIONS

Organizational service innovation has received little attention and interest in the subject came mainly from the change and adoption literatures of organization. The present study diverts from the adoption and change literature of organizational innovation and the literature of new service development in that it concentrates on only new-to-the-world organizational service innovation. It does not consider the adoption and change part of the issue. This divergence gives an opportunity to compare the results of this study to the ones presented in the adoption, change, and new service development literature.

Theoretical Implications

This study contributes to the field in many ways. The results of the in-depth exploratory case study revealed that management plays a major role in organizational service innovation. At an aggregate level, this conclusion is in parallel with that of Robey and Sales (1994), Ettlíe (1983), Martin and Horne (1994), and Edget and Jones (1991). At a specific level, convincing the faculty members and departments at RPI to participate in the organizational service innovation by instituting a variety of internal policies, for instance, was an important function performed by management of RPI, as found by Robey and Sales (1994). However, the study did not observe a role from top management as a major conflict settler, as found by Robey and Sales (1994). Instead, the senior management acted as an agent to match the wishes and needs of customers with those of its organization, departments and faculty members. This study's results also support Ettlíe's (1993) finding that top management coordinates different departments. The top management at RPI provided coordination and cooperation among different departments within RPI as well as between RSVP and prospective customer, IBM, during the organizational service innovation process. The coordination and cooperation support increased customer commitment, as Martin and Horne (1994) previously revealed in a different study.

The results of the in-depth study indicated that the verbal support of senior management of the people assigned to bringing the service idea to the market was critical in both motivating them as well as carrying the message to other departments at the Institute. In addition, giving financial freedom to the newly created service organization, RSVP, was another commitment of the senior management that had not been previously discussed in the organizational innovation literature. Keeping RSVP as a separate business unit within RPI to provide financial flexibility was instrumental to the success of RSVP. The finding that top management's commitment in terms of understanding customers' perspective and communicating it to key people in its organization is also another contribution of this study.

During the organizational service innovation process, the technology observation and the technology selection for flexibility and quality happened to be the three important issues attended by the mid-level managers at RPI. Although Edget and Parkinson (1994) found out that overall quality and use of technology contributed to the success of a new service, the present study revealed that a technology flexible enough to support future expansion of services and that a technology level high enough to provide a quality service are also important in designing the service organization. Use of technology, for instance, as a reason for success does not mean that a selected technology guarantees future expansions of a service. Stanford University and Columbia University, for instance, were using technology, which was not flexible enough to support their future expansions. However, technology selection for flexibility and quality gave RSVP a competitive edge over the other schools. The results also indicate that technology observation aids in many ways, such as finding a new method of doing existing things better with the Internet. The conclusion of this study that differentiating advantages built into the service organization and service product are contributing factors for success is also in parallel with that of Easingwood and Storey (1991) and Edget and Jones (1991). Internal marketing and market potential as previously found by Easingwood and Storey (1991), and a clear definition of the target market, as found by Edget and Jones (1991), were also found important success factors for the organizational service innovation. The present study did not observe market research, as found by Easingwood and Storey (1991), and adequate financial resources for market research, as suggested by Edget and Jones (1991), as success factors for the organizational service innovation.

The distinctive characteristics of services make them different from manufactured goods. This study revealed that during its organizational service innovation RPI considered these different service characteristics to shape the content of its program offerings (service product innovations) and the design of the process to deliver those programs (RSVP) (organizational service innovation). Previous research, such as the one conducted by Cooper and de Brentani (1991), also indicated that providing tangible evidence contributed to the success of a new service offering. In addition to this conclusion, this study extends on Cooper and de Brentani's (1991) work that considering these distinctive characteristics during the service innovation process contributes to the success of not only service product offerings, but also organizational service innovations.

This study revealed that some of the criteria for success proposed in the new service development literature were used by RPI to evaluate the performance of its service innovations, such as a positive financial return, moving a service organization into a new direction, opening up a window of opportunity, etc. Some of these criteria for success were included in official RPI documents prior to the innovation while some of them were in the minds of the champions of the organizational service innovation. The study also revealed some criteria for success for organizational service innovations that have not been previously discussed in the literature. These are a positive learning experience of customers (in our case students and corporate customers), strong relationships with the industry, an impact on market position, a better reputation, and a balanced business portfolio.

Consequently, the benefit of this study is that for an organizational service innovation to be successful, upper management should dedicate itself in many different ways, including those that were revealed by this present study and discussed above. The use of formal power by senior management may not be needed, as observed in our case study. The use of an innovation process helps prevent early mistakes. An explicit consideration of the different service characteristics helps create a unique service organization and service product. Technology selection, growth potential of market, and differentiating

advantages attended to at the organizational service innovation process help create a successful service organization as well as service products. A limitation of this study is that it considered only a successful organizational service innovation at an educational institution. We do not know whether the results are also applicable to other service organizations in different service industries.

Managerial Implications

Life-long learning has become a necessity for working professionals. The companies operating in many different geographic regions of the world have also realized the need to support their working professionals in increasing their level of education to be more competitive in the market. In the light of this new market development, many universities in the developed and developing countries will have to reorganize their structures to reap the full benefits of this opportunity. RPI's model of organizing its distance education program and the reasons of choosing such an organizational structure provide insights into the managers of those institutions whose intentions are to take advantage of this development.

The aggregate model of organizational service innovation success informs those managers at educational institutions in such a way that to set an organization to serve distance students, managers will have to dedicate much of their time and effort to balance the needs and wishes of prospective customers with the internal demands of people working for their educational institutions. The model also helps them realize that considering the different service characteristics, available technology and technological developments, market conditions, and differentiating advantages built into the service organization during their organizational service innovation process will be major determinants for success.

Directions for Future Research

Similar case studies from different service industries, such as communications, transportation, hotels, hospitals, schools, wholesaling, retailing, and professional consulting services, can be conducted to make the results of this study more robust. The case study protocol developed for this study's purposes can be modified with minor changes to conduct those case studies. The new case studies may require some modifications in the dimensions included in the model or some other new dimensions may be revealed as a result of those case studies. This, as a result, makes the model readily applicable to other service industries.

A unique characteristic of an exploratory study is that it reveals some variables or issues that have not been attended previously. When it is substantiated with an adequate number of case studies, the model can be used as a basis to conduct a quantitative study even though the case study research method is not considered a preliminary research activity leading to a quantitative study (Yin, 1994). The benefit of conducting such quantitative research is that it increases the generalizability of findings reached by the case studies. Put another way, the quantitative study provides an opportunity to double-check the results of the exploratory case studies. Factor analysis, for example, would help one to understand whether the distinction made conceptually at the aggregate level, as top management related issues, service innovation process related issues, and service related issues are statistically valid.

One important issue necessary to mention at this final point is that due to the high imitability of service innovations as a result of the lack of patent protection, service organizations or their informed

members will hesitate to provide adequate information to research questions in a qualitative or quantitative study. Even in some cases, a researcher with good industry connections will not receive a fair amount of response to his or her research questions in service innovation. That is why the selection of the service organization willing to dedicate a fair amount of time and response to research questions is highly important.

NOTE

1. Available upon request from the author.

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