

**An Innovative Model of Service Development:  
A process guide for service managers**

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## **ABSTRACT**

This paper presents the results of research into the early stages of developing new services for a local government body. It also presents an empirical evaluation of a process model for new service development (NSD), tested in four case studies with the local council in a city in New Zealand. One of the first of its kind in the public domain in New Zealand, the purpose of this research was to develop a framework for the process of NSD and test it out empirically in order to create a new model for the first stage of service development, which incorporates the participation of users and service staff.

Since the extent of involvement of service staff in service delivery varies, a range of services was selected within the local government, where a real opportunity or need for service improvement existed. A key message that emerged from the research was that service development benefits from the participation of both users and service staff. Service managers and developers should adopt a more participatory process of development, as per the model. The model serves as a new tool to emphasize the involvement of service users and staff in new service development.

**Keywords:** new service development, process models, user interaction.

## Need for Service Development Models for the Public Sector

While some progress has been made in recent years in investigating service development in financial services via surveys of past projects, the service development literature revealed that more research needs to be done on testing models empirically to build an integrated body of knowledge based on practice. Abbie Griffin, a leading researcher carried out a comprehensive survey in 1997, on the lines of earlier monitors conducted by the PDMA (Product Development and Management Association, USA). The key findings that are significant to this research are:

- The dominant differentiating factor for achieving service success was having a market-driven process. Using a formal process and not skipping steps in the process has long been a differentiating factor.
- A majority of service firms have no process or use an informal process
- More research on the process needs of service firms should be done
- NPD processes continue to evolve and so should NSD processes
- Best practice firms use more complete processes.
- The relative focus and differences in the Service development processes are in the front end-steps rather than the later stages.

The importance to successful innovation of both a systematic development process and user's involvement in the process have been recognized. Research on NSD has shown that a formal planned approach to new services is associated with improved performance (de Brentani, 2001). In the case of product development, the process has developed over the years into well-recognized stages. The user has participated in all of the phases, whereas, interest in the service development process has been relatively recent and the user is only now being involved in the development process. The lack of understanding of market needs was the leading reason cited for new product and service failure (Rosenau, 1996; Griffin, 1997) as quoted in Johne & Storey's comprehensive review of service development in 1998.

### **Service Characteristics**

Services differ from goods in some important ways and these differences present special challenges to service developers. When developing new services, the following four service characteristics need to be considered: intangibility, inseparability, variability and perishability. This means the service cannot be examined before purchase (as in the case of tangible goods), it is produced and consumed at the same time, it varies from one service to another within the same category and it cannot be stored. The nature of services affects their development and management (Lovelock, 1996).

## **Service Development Process**

New Service Development (NSD) has been relatively neglected in the literature on innovation. Valuable insights are available in the extensive new product development (NPD) literature, which can be considered while developing services. However, it is recognized that there are a number of aspects distinctive to services, which are likely to affect its development (See Table 1.). One of these is the role that users and service staff can play in NSD.

New service development has a similar development process to product development, but there are significant differences in the activities and the research techniques (Johne & Storey, 1998). Johne and Storey in their comprehensive review of service development literature commented on the importance and lack of effort to develop specific service development models. The literature suggests that relative to product firms, service firms are less likely to perform concept tests, test marketing, launch activity and are inefficient in predevelopment activities (Easingwood, 1993). The early stages of problem description, idea creation, concept definition and screening are vital for the success of the future stages.

A study comparing the innovation activities of Australian firms explored the factors necessary for successful development of new goods and services. The study (Atuahene-Gima, 1996) found that both types of firms focus on similar factors but the relative importance varied. The critical factor for services - the importance accorded to innovation activity in the firm's human resource strategy - ranked third in importance for manufacturers. Service innovation advantage and quality ranked third in importance for service firms. Compared to manufacturers, successful service firms must place greater emphasis on the selection and management of employees who work directly with the user.

A review of service development by Cowell in 1988, highlighted the following points:

- Services development appeared to be technology driven rather than user driven
- Generally, the rate of new service creation is quicker, while user adoption of new services are slower, relative to new products
- There are more service improvements rather than service innovations
- In most services, users are involved in the service production process
- Service staff are critical to service production and delivery.

The lack of experienced development staff is one of the key barriers to product development in service firms. There is some tendency for development teams to be run on a department or committee basis. It has also been stressed that there should be no fear of blame or punishment for failure (Atuahene-Gima, 1996).

**Table 1:**

| <b>Development Stages</b>                 | <b>New Product Development</b>  | <b>New Service development</b>  |
|---|---|---|
| <b>Problem Identification</b>             | Contact with users helps identify the problem   | Contact with users and service staff can help identify the problems   |
| <b>Idea Generation</b>                    | Various idea generation techniques have been used and the user may be involved.   | Similar techniques could be used, but participation of both service staff and users will be beneficial.   |
| <b>Concept Development and Evaluation</b> | Formulation of basic concept definition and presenting users with verbal descriptions and or sketches to get their reactions    | It is important to seek both user and service staff descriptions for the concept. Evaluation should involve both groups   |
| <b>Business Analysis</b>                  | Analysis of financial, technical and manufacturing issues.  | Analysis of economic, technological and operational issues (which includes cost of hiring and training service staff, facility changes and delivery system enhancements). |
| <b>Development and Testing</b>            | Construction of product prototype (technical, marketing, manufacturing, research and development, design functions) and testing | A challenging step in the case of intangibles (technical, marketing, human resources, operations, logistics) - again essential for service staff to play a part.          |
| <b>Market Testing</b>                     | Tangible product tested on a limited market.  | Standard approaches are difficult; therefore, internal testing, simulations or role-playing may be used.  |
| <b>Commercialisation</b>                  | Internal and external launch preparations required  | Excellent internal marketing required to maintain enthusiasm for the new service, due to slow new service adoption by users.  |
| <b>Post evaluation</b>                    | Consider minor modifications and improvements to product based on market reaction.  | Customer satisfaction surveys. The service concept definition may provide a focus point for improvements to service quality.  |

### **Development Process for Products and Services**

#### **Role of Users in Services**

Both service and manufacturing organizations try to satisfy identifiable user needs. The satisfaction of needs in each case requires stages of development (well defined and well-researched in the case of goods, but not services) for the creation, purchase, use and evaluation of the new product/service. The difference between services and goods lies in the distinctiveness or separability of the steps and the degree of involvement between the user and service staff in each step. The partnership of the service staff and the user is a direct result of the unique characteristics of services. This leads to important issues of process management of the service staff and users.

The two main causes of service failures have been found to be poor, or lack of, market research and process. Few relatively recent studies deal with the formal process of service development and the user's participation in the stages of development (Scheuing and Johnson, 1989).

Earle (2000, p. 48) emphasized the integration of user research into the product development process and the evaluation of the market, particularly in the early stages. Most services involve a close interaction with users. The interaction is the distinguishing feature of service offerings (John and Storey, 1998, p. 6). It poses special challenges for service development. This means the development should not only look at the service product but also the nature of interaction with users. John and Storey, 1998, point out that because the interaction process is typically an integral part of a service, the development of a new service is usually far more complex than the development of tangible products. Table 2 shows a comparison of the user's interaction in the various stages of development of manufactured products and services.

Griffin's 1997 review on development practices, reports a focus on qualitative market research and a trend towards direct contact with users. Best practice studies recommend that New Product Development (NPD) and New Service development (NSD) should start from a product or service strategy, use multi-functional teams and do more qualitative market research (Kelly and Storey, 2000). Scheuing and Johnson (1989) have developed a New Service Development model (Figure 1.) that incorporates the design of both the service and the delivery process. They concluded that service innovators must use more market research in the development process.

**User Involvement in Government Services**

The council's stakeholders include groups of the public, businesses, voluntary organizations, ratepayers, residents, environmental and other lobby groups, tangata whenua (Maori of local descent), recent immigrants, ethnic groups and visitors to the city. The question of how the needs of these service users are obtained is an important issue in the acceptability and performance of services provided by the council.

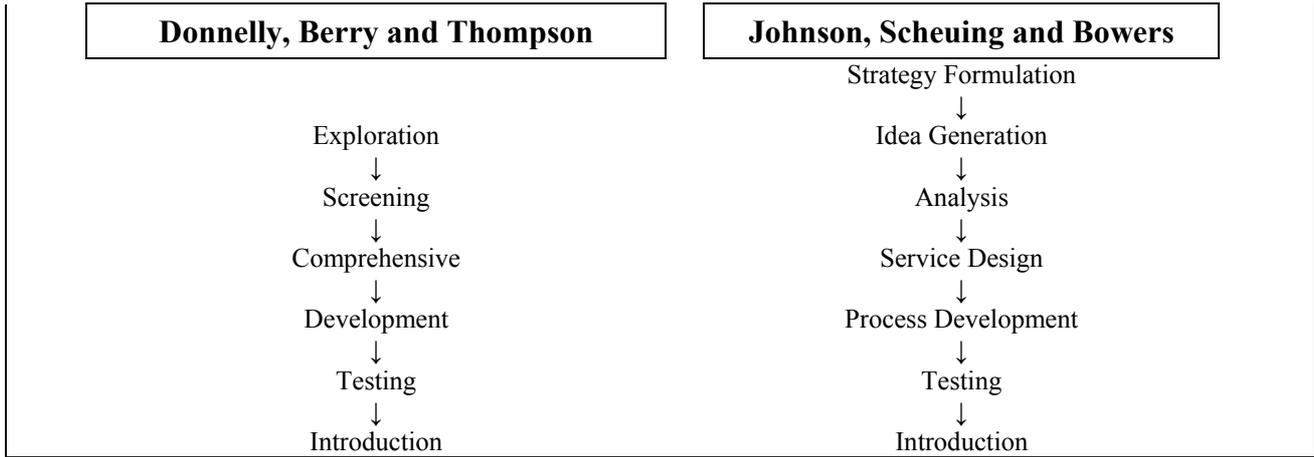
**Table 2:**

**Differences in the User Interactions in the Development Processes for Products and Services.**

|                              | <b>Products (Goods)</b>  | <b>Services</b>  |
|------------------------------|--|--|
| <b>Production / Assembly</b> | Customer not involved in the production process<br>Production is not visible to the customer (hence, the manufacturing facility is unimportant to customer)  | Customer is part of the production phase<br>Most of the process is visible (hence, service facility is very important)   |
| <b>Purchase Use</b>          | Production can be standardised and controlled<br>Production takes place at a separate location and time from use<br>Purchase is separated in time from use<br>The customer controls the use of the product. The firm may provide guidelines, but is outside the process when it actually happens | Assembly cannot be easily standardised<br>Assembly and use occur simultaneously<br>Purchase and use occur simultaneously<br>The supplier is integrated into the use process and can control this |

**Figure 1:**

**Service Development Process Models from the Literature**



**New Zealand Local Government Services**

Local government is an important sector of the New Zealand economy. It contributes almost 3 percent of gross domestic product (GDP), employs 37,270 people and has assets valued at over \$35 billion. New Zealand has a population of nearly four million (Statistics New Zealand census, 2004). Local government has a very large influence on users’ lives. It is responsible for basic services such as roads, water supplies, sewage treatment and disposal (utilities) and also has regulatory roles such as housing permits and licenses for animal ownership. It is increasingly required to provide new services, particularly services that are not provided by the private sector or central government and which are demanded by the communities through the annual planning process.

At present, emphasis is placed on submissions and public meetings as a way of initiating new service development or improvements. Public meetings and forums appear to be unsatisfactory for specific issues that require a targeted audience. Creative and consistent techniques and procedures are required to include the public in service decision-making (Manson M., 2003, service manager, city council). Councils would like to be seen as ‘listening’ to the community. Legislation requires councils to be more accountable, efficient, consult with the local community and be user focused.

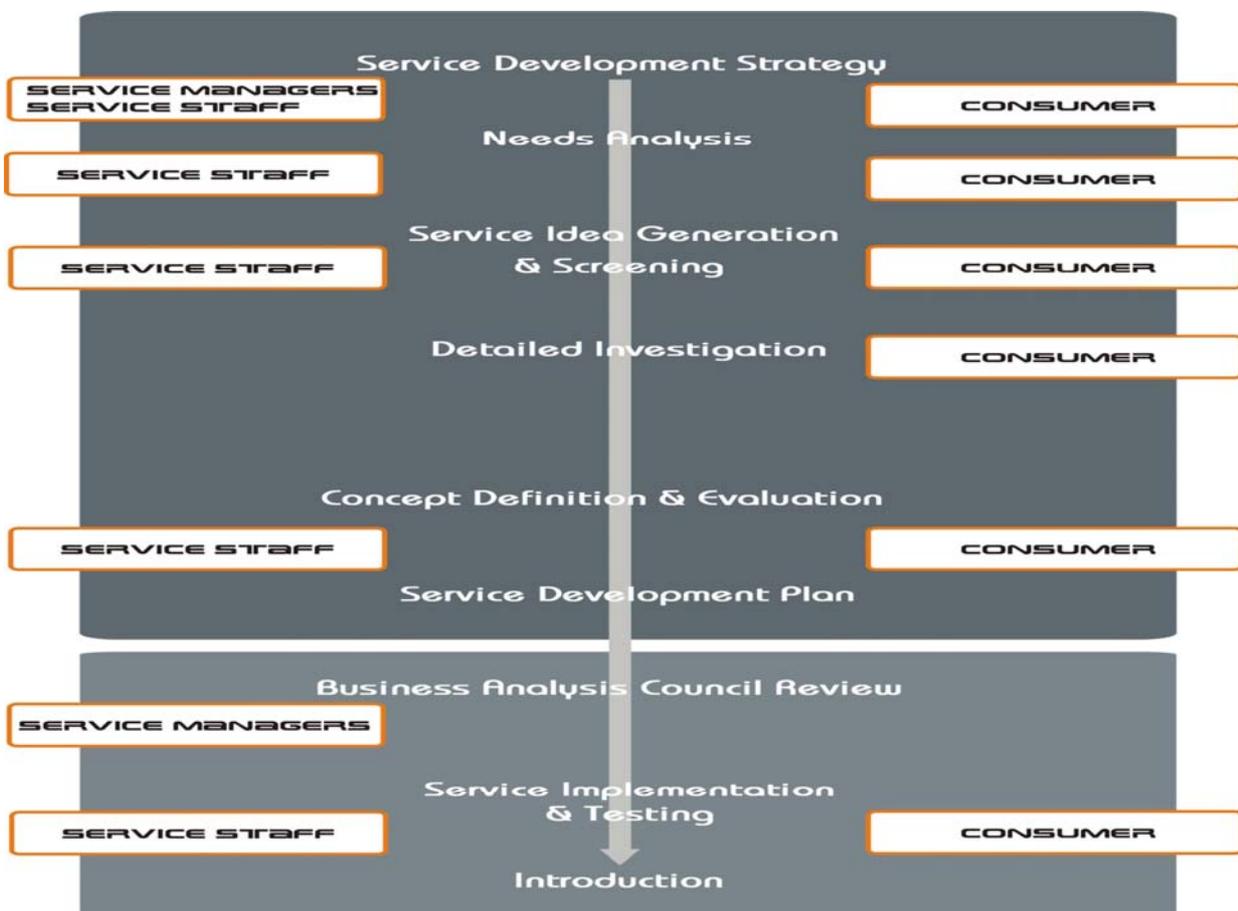
There are fifteen city councils in New Zealand. Each Council is managed by a team of executives who report to the mayor and councilors. The councils decide the range of services provided, delegate the implementation of these to staff and monitor the performance. The government has recently come under increasing pressure to improve services (from being the sole provider to being competitive) and to involve the community (Sanderson, 2001). Councils are encouraged by the local government Act to consult with the public for the Annual Planning process. Any new service initiatives are required to be submitted to the council and be adopted into the Annual Plan, if it is to be actioned in the following year. Public submissions have increased in the last few years. Submissions are the principal means of participation for the public (users) at present.

## Local Government Services in the Study City

The primary research for this study was conducted with the local government services in the sixth largest New Zealand city, consisting of a population of about 78,100 people (Statistics New Zealand 2004 census). The local governing body consists of 15 councillors, a mayor and a management team of nine members, including the city manager. The mission statement of the Strategic Plan was: *'Working with our community to build a better city'*.

There are a range of council practices for user input such as, public forum, radio talkback, submissions (oral/written), public notices and meetings. While these methods allow for public input, they may only include users who have strong opinions and therefore may not be representative of the population. The traditional public meetings are not well attended (Scenarios for local government, 1998). The challenge in this research was to have methods that combined flexibility with structure. Hence, the need for random sampling techniques and user research methods that systematically include users - methods that had clear objectives, expected outcomes and decisions to be made. These techniques helped to inform the user of their role in the process and the timing of their inclusion, as well as aid in gaining useful user information for NSD. Techniques (such as role playing and focus groups) allowed for presentation of material to the appropriate segment of the public for reaction were particularly useful, especially for service concept selection.

**Figure 2 Conceptual Framework of Service development**



## Research Method

Given the focus of the research on processes, the *case study method* was considered to be an appropriate strategy. The case study approach takes into account the research context and is set in real-life situations. The research plan and stages of service development that were examined are outlined below. Four case studies with the city council were used to develop new services by using the framework proposed (Figure 2).

The research questions were:

- How can users and service staff participate in the early stages of service development?
- Can this new framework be tested to highlight the consumer and service staff involvement in the development process?

The service areas that were studied were the Strategic Services, Customer (telephone) Services, Visitor Services and Bicycle Services.

Checklist for case study research:

- Discussions with Service Managers
- Review of service literature
- Gathered current information from experts
- Identified research areas
- Examined council culture and procedures
- Selected service development case studies
- Clarified objectives, scope and 'fit' to strategy
- Defined outcomes and decisions
- Identified problems
- Research plan was designed and executed
- Gantt charts were used for project scheduling for each case study
- Results were analysed using statistical techniques
- The conceptual Service Development model was tested and revised
- Consumer and service staff participation was analysed
- Ideas and concepts were discussed and improved
- Service feasibility & plan submitted to the Council for review
- Council to make go/no-go decisions on whether to move to Service Development and implementation
- Allocate budget and incorporate into Annual Plan
- Develop and deliver service

Factors that needed to be considered before selecting the methods of consumer input were the sort of information required, how that was going to be used and what decisions depended on that information.

The research methodology began with secondary data collection or desk research, followed by qualitative and quantitative primary research. Exploratory market research was carried out to gather secondary data. Preliminary primary research was used to gather consumer data in order to provide background information and in some cases, to profile the target segment. This was followed by

qualitative research, which included expert interviews, consumer and service staff group discussions for need and attribute identification and then idea generation. Quantitative techniques were used to gauge the importance and evaluation of the service attributes, consumer preferences and selection of concepts. The general approach was not restricted to just a single technique, but a combination of techniques embedded in the decision-making process of service development.

The first stage in service development begins with **Service Development Strategy** (See Table 3). In this sub-stage the development aims, objectives and scope were defined with respect to the organization's vision and strategic goals. The rationale for the service improvement or new service were understood and established in conjunction with service staff. The specific research objectives were clearly defined, the constraints outlined and agreed upon. A preliminary plan for the research is established and the existing service issues understood, by gathering internal information from service staff.

**Opportunity Identification & Needs Analysis** involved a thorough evaluation of the current service from a user perspective. Service attributes and the importance of the attributes were discussed with users and service staff. Service problems and areas to focus improvement were explored. Comparative data, if available, was sourced and examined.

The sub-stage included both internal and external data gathering. This led to the identification and definition of the service problems or needs. This sub-stage included a study of user behaviour, needs, attitudes and service usage. *Experts* in the area were consulted. National and international information was sourced. Important trends in user behaviour, user demographics, perceptions and interest in the use of services were gathered. The target market segment was identified and defined clearly, and their specific needs and problems were captured.

**Service Idea Generation and Screening** included both service staff and users in generating service problems and possible solutions. Focus groups with users and service staff proved to be a valuable source of practical ideas. Idea-generation techniques aided in the generation of service ideas. Simple **checklist screening** matrices and **scoring methods** helped reduce the number of ideas into a few selected categories of ideas.

An important point to note is that in the case of council service development, some services can be very large and complex; in which case, it is useful to analyse the data on both macro and micro levels. For instance, in the bicycle research, a large number of varied ideas were gathered. These were first sorted in terms of the macro level (i.e. transport types, infrastructure, transport management and overall strategy) and micro level (road lighting, road surface, specific bicycle lanes, signs and bicycle stands). These were then further categorised into sub-levels: individual level (safety, health, comfort) and community level (environment, road rules, traffic congestion, motorist behaviour).

The **Detailed Investigation** sub-stage involved in-depth surveys of target users to determine the extent of service problems, to build a user profile, to gauge user perceptions, attitudes and usage and an evaluation of existing services. Parts of the model were built in each of the case studies and the fourth and final case study tested all of the substages.

Service Concept Development and selection was based on discussions with users and service staff to develop and evaluate service concepts. Once a set of service attributes were selected, it was possible to develop new service concepts. The service concept was described in terms of the features of the service, target segment, the benefits and the needs satisfied. A brief summary description of this was presented to users/service staff for evaluation (e.g. in the bicycle research verbal descriptions were presented to users and service staff). Since this research focused on user issues, many of the criteria used were from a users' perspective. This is not suggesting that other criteria such as technical or financial are less important. Internally, the council could incorporate a service concept form that detailed issues such as who the service frontline staff would be, who the support staff would be (if applicable), the service project champion, demand patterns and the methods of promotion to users. Concept evaluation involved both users and service staff, as both are part of a service delivery, especially in cases where the frontline staff interacted directly with users.

### **Project Review and Control**

Project review sessions were held on a regular basis, approximately once every three weeks, with a multi-disciplinary group of people. For instance, in the bicycle study the group consisted of the researcher, council road engineers, two councilors who were interested in the service, and users who were cycle advocates. The team met at a central location in the city to assess progress, discuss information gathered and plan future activities. Experts were called in when required. The researcher organized and prepared for the next sub-stage based on these reviews and discussions. Gantt charts with clear milestones were prepared for each case study in order to maintain control over the timing of process.

### **Modeling of Service Development**

A review of the service development literature and process models, formed the basis for the creation of a new conceptual framework for service development (Figure 2), that incorporated the contributions of service staff and users. The testing of this framework was carried out in four case studies with the local government services and resulted in the NuServ model in Figure 4.

**Table 3:**

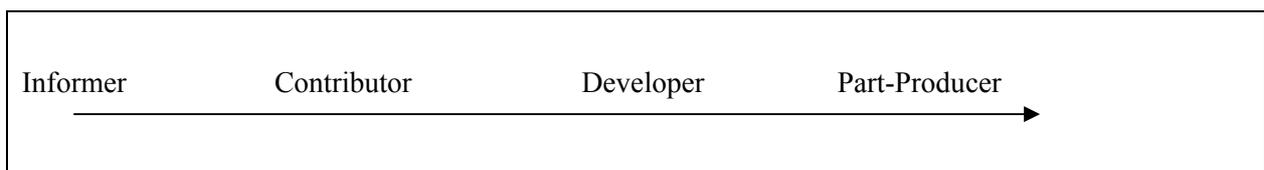
**Early Stage of Service Development – Activities & Decisions**

| <b>Service development First Stage</b>           | <b>Activities</b>  | <b>Decisions</b>   |
|--|--|--|
| <b>Service development Strategy</b>              | Situation analysis<br>Internal data<br>Definition of service and objectives, and match with vision<br>Secondary data collection<br>Problem identification                                      | Goal decisions<br>Information evaluation<br>Synergy with vision<br>Commitment to improve or include new services |
| <b>Opportunity Identification</b>                | Competitive analysis<br>Identification of information gaps<br>Primary research plan  | Potential to increase service usage<br>Resources available<br>Go/No Go decision                                  |
| <b>Needs Analysis</b>                            | Needs and problem exploration<br>Preliminary investigation<br>Service attribute identification<br>User perceptions and attitudes<br>Target market identification<br>Service attribute analysis | Service area focus   |
| <b>Service Idea Generation and Screening</b>     | Service attribute generation<br>Service improvements identified<br>Idea Generation<br>Idea Screening   | Review of selected services<br>Evaluation of service ideas   |
| <b>Detailed Investigation</b>                    | Quantitative research and analysis<br>User problems validation and current service evaluations<br>Important attributes to improve  | Important service attributes<br>Go/No Go decision  |
| <b>Service Concept Development and Selection</b> | User Concept<br>Concept Description<br>Concept Selection   | New <b>Service Plan</b> for Council review   |

The research techniques began with qualitative, exploratory research and moved to quantitative techniques. These included users and service staff who were involved throughout the early development phase. This research showed that there were various forms of user and service staff input. At one end of the scale is the *collection of information* from the user and at the other end is *active participation* by the user/service staff, as shown in Figure 3.

**Figure 3:**

**Continuum of User and Service Staff input in NSD**



In the four case studies undertaken, user participation followed this simple representation of input. The techniques, outcomes and decisions in the research are shown in Table 4 as an example from one of the case studies undertaken.

**Service Development Model involving Users and Service Staff in the First Stage of the Process**

This research resulted in the NuServ model (Figure 5) which serves as a generic process to guide new service development. The model’s sub-stages will suit most services, while the specific techniques can be selected based on the nature of the service under development.

**Table 4:**  
**Sample from the Bicycle Service Development Research**

| <b>Sub-stages</b>                   | <b>Activities &amp; Techniques</b>   | <b>Outcomes</b>  | <b>Decisions</b>  |
|-------------------------------------|--|--|---|
| <b>Service development Strategy</b> | Information gathering<br>Desk research<br>Internal data collection<br>Situation analysis   | Objectives and scope of study  | Strategic fit<br>Go-No Go decision  |
| <b>Opportunity Identification</b>   | Secondary research<br>Literature search, internet, e-mail, CD ROM databases, key-word search, Census   | current bicycle usage statistics, comparative data- and cycling strategies from other cities<br>Service assessment | Assess the potential to increase usage  |
| <b>Needs Analysis</b>               | Identification of problems/attributes<br>Experts – national & international<br>Focus Groups with users/service staff<br>Qualitative research | List of barriers/ enhancers<br>Service problems<br>Areas for improvement of cycling services                       | Major service problems, needs<br>Areas for service improvements<br><br>Service attributes |
| <b>Service Idea Generation</b>      | User/service staff idea-generation and grouping<br>Visual Collage, Brainstorming, Post-box technique   | Service ideas categorised into major areas   | Review of service problems and ideas  |
| <b>Service Idea-Screening</b>       | Sequential discussion groups – users & service staff, Problem-related, solution-based selection  | Most preferred ideas<br>Rating of service ideas  | Acceptance of service ideas and attributes to develop into service concepts               |
| <b>Concept Development</b>          | Service concept definition<br>Sequential group discussion  | Concepts that can be tested by users and service providers   | Final service concepts<br>Go-no go decision   |
| <b>Detailed Investigation</b>       | Quantitative research  | Service usage and user behaviour   | Service feasibility   |
| <b>Concept Evaluation</b>           | Service concept selection<br>User preference testing<br>Ranking and rating of concepts   | Most preferred concepts  | Concept optimization, important concepts  |
| <b>Service development Plan</b>     | Documentation and analysis   | Detailed feasibility and plan for Service development  | Council to review and develop service<br>Go-No Go   |

**Activities in the Development Process**

The details of activities, outcomes and decisions are in Table 4. They show the go-no-go decisions to be made at crucial points during the process, when the management team should decide whether to proceed or not with the development of the service. It should also be noted that the sub-stages are not linear; but that some activities may be performed at the same time and some may be iterative. For example, in the opportunity identification sub-stage and in needs analysis there could be an overlap of activities or the need to reconvene a group of service staff or users and hence the technique of sequential discussion groups was used in one of case studies.

As stated earlier, the nature of the service influences the development of services. In the case of the local government, the number of stakeholders and users are many, and therefore it is important at the start of any service development project to clearly identify these key groups. They should be brought into the development process at appropriate times as shown in the model. Multi-disciplinary teams of staff across departments should be brought together, along with users at appropriate times during the development process. For example, in the Bicycle case study, a cross-functional team consisting of roading engineers, councilors, service managers, frontline service staff, transport service staff and experts was organized by the researcher. This team was brought together at regular intervals, but particularly at the initial sub-stages (strategy development, opportunity identification and idea generation) and again at the concept development sub-stage.

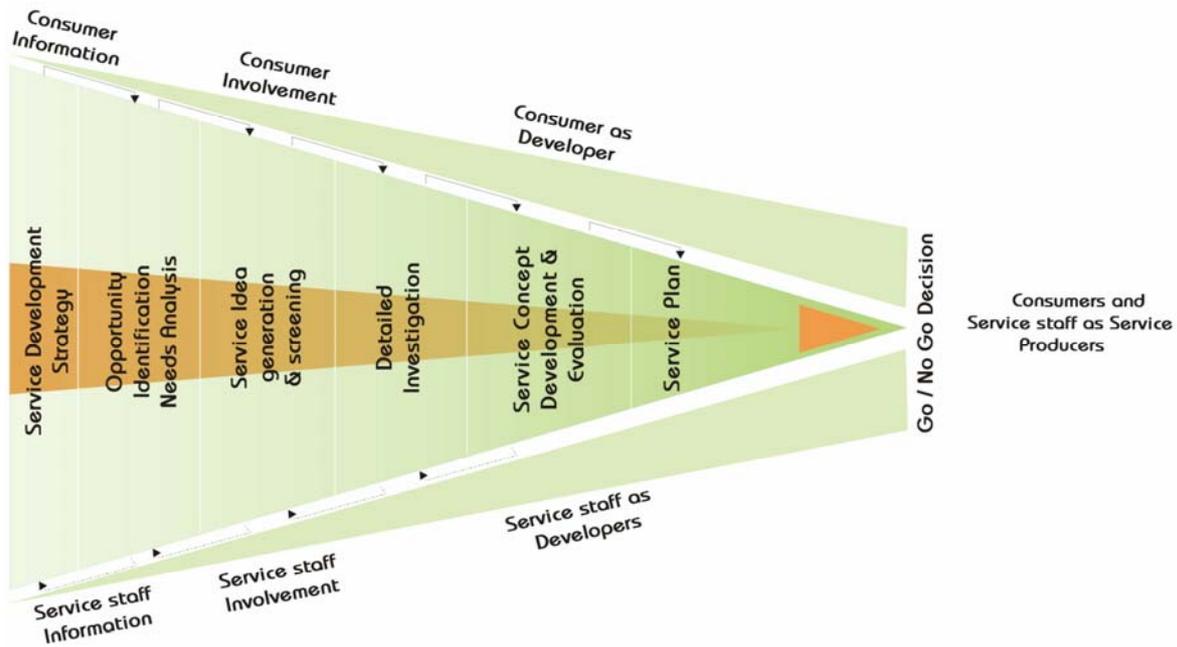
The NuServ model of service development (Figure 4) was found to be suitable and effective for services offered by local government in New Zealand. It was found to fit in well with the service context and local government procedures. As highlighted earlier, the involvement of users and service staff varies according to the stage of development. It starts with information gathering and moves quickly to service assessment and then active involvement as service developers. Users become part-producers of the service eventually at the service delivery stage.

#### Benefits of the NuServ model - first stage of service development

- When compared to other models, it gives details of sub-stages, captures the critical role of the user and service staff and the nature of their input. Also shows the iterative nature of development.
- Provides a visual guideline for managing the process better. It is important not to introduce services without the upfront activities (especially since most services are easy to produce and hence the risk of omitting critical stages).
- The model helps maintain a systematic approach, thus reducing the risk of failure and providing early information on user acceptance. It helps reduce the uncertainties of the fuzzy front-end, prevents wasteful spending or effort on areas that are not relevant to the particular service being developed and is both user as well as service staff-oriented.

Figure 4:

**NuServ model – First stage of Service development**



**Strengths of the Process Model**

The NuServ model (Figure 4) was used to guide the involvement of users and service staff in service development. The nature of that involvement was tested in the four case studies to validate the conceptual model that was first proposed. The empirical research enabled a refinement of the conceptual model. The NuServ model shows the nature and intensity of involvement of users and service staff at various sub-stages of the development process. It also highlights the iterative nature of development, which is shown by the arrows looping back into some sub-stages. The model (Figure 4) proved extremely useful to inform users and service staff about their contributions and role in the process of service development, enhancing communication, cooperation and motivation. Compared to earlier models, this model appears to have more sub-stages in the first stage of development, but the empirical case studies showed the importance of these steps, which could be attributed to the intangible nature of services.

Most other models start with problem description while the NuServ model begins with service development strategy and then goes into problem identification. This initial sub-stage of strategy development was found to be critical to direct the development, give it focus and ensure that it met the overall vision of the organization, and a match with the portfolio of services.

Another area of difference between the proposed model and other models is the presence of the sub-stage of needs analysis. The needs-analysis sub-stage emphasizes a user-oriented approach to

service development. The sub-stage included user activities such as service usage and attitude study, service problems identification and service attribute development. None of the previous models on Service development showed the involvement of service staff, nor did they detail the activities. The NuServ model also shows the nature of the involvement of users and service staff. The input starts with providing information and proceeds quickly to service usage assessment, needs analysis, service idea generation and so on. The participation begins with relatively small numbers of respondents (qualitative samples) and proceeds to involving larger samples of respondents (quantitative samples). Most of the previous models were based on survey data gathered from service managers about their practices (Johnes and Storey, 1997), while the NuServ model was developed based on theory and tested via action research, therefore it is first-hand and empirical-based.

### **Service Staff Participation**

Service staff involvement was particularly valuable in the initial sub-stage of Strategy Development and again in the idea screening stage. Preliminary screening procedures were followed starting with a simple pass/fail system based on the council's vision and responsibilities, followed by a checklist screening based on user service attributes. In future research, economic and technical criteria should be used in the next phase of Service development such as in concept screening by service staff.

### **Conclusions**

A service development framework that incorporates the participation of users and service staff in the development process was created based on the literature and the characteristics of services. This framework was applied and tested in four case studies with a local government in New Zealand, to produce the NuServ model of service development.

The model provides a systematic process guide to service managers and providers, for developing and improving services systematically. It is a tool to aid service development, by providing direction and review points for decision-making and suggesting when and how to incorporate users and staff in the development process.

This research highlighted that the participation of users as well as service staff are beneficial in the first stage of development, as each group brings requirements for the new service from their perspective. In general, the modification to the user techniques used in service development should focus on providing tangible stimuli where appropriate (especially at the idea generation stage) and enhance the participation of users and service staff.

## **About the Author**

Dr Aruna Shekar is a Director of the Centre for Product Innovation and a Senior Lecturer in Product Development at the Institute of Technology & Engineering, Massey University, Auckland, New Zealand. She has lectured in the areas of product innovation process, tools and techniques of product development and user research since 1994. Prior to this she has worked for Cadbury Schweppes, Australia, and Telecom in New Zealand. She has won awards (a gold medal for her masters) and presented at national and international conferences. In 2003 she received her PhD in Product Development from Massey University. She has lead several consultancy projects and received many external research grants. Currently she is researching best practices that lead to successful product development, in conjunction with the Product Development & Management Association (PDMA), USA.

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