

# *New service development: A literature survey*

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*The multifaceted, complex process of new product development could be regarded as the single most important factor driving firm success or failure in the maturing telecommunications industry. The speedy introduction of innovative new services with a customer quality orientation is needed to excel in this extremely competitive environment. Approaches proposed to a service marketing strategy include the exploitation of similarities with product development, relating, or even transforming, the service to a product or something tangible, management of temporary supply/demand imbalances and service flowcharting/blueprinting. Sensitivity towards ethical issues is important to avoid a negative reputation and to get a name for being honest, fair and accepting of responsibility for the consequences of the service developed. Globalisation, deregulation (which causes increased competition) and the shifting of patent law in favour of the inventor drive the increased importance of intellectual property protection, to prevent competitors stealing inventions and new service concepts. To qualify for patent protection, a concept must be new, useful and not obvious to someone with knowledge in the field. In the case of new service development, one cannot apply all the principles and practices to protect intellectual property. However, it is surmised that an organisation can maintain a competitive advantage with new services by encapsulating and integrating such services in internal expert systems, software and firewalls to entry. Internal safeguards and the confidentiality of systems are obvious policies. Potential research topics are offered.*

## **Introduction**

Brown & Eisenhardt (1995) mention that the literature on product development continues to grow. This research is varied and vibrant, yet large and fragmented. The burgeoning product development literature is categorised into three streams of research, namely, product development as rational plan, as communication web and as disciplined problem solving. It is derived from this citation that there are still many new research opportunities in the study field of product development. Referring to the fragmented character of the literature in this field, it is concluded that the integration of knowledge in the field could contribute to a better understanding of interrelating aspects and provide a useful approach to a successful product development strategy.

Lovelock (1996) comments that the study field of services management evolved much later than that of management in manufacturing organisations. Fisk, Brown & Bitner (1993) record the most-researched areas in services marketing as service quality, service encounters/experiences, service design, relationship marketing, customer retention and internal marketing. However, most contributions in service design were in service blueprinting/mapping. Compared to the engineering and production emphasis associated with the development and manufacturing of tangible products, research on the parallel activities for services was, according to the authors, meagre.

From the citations above on services marketing it is concluded that the study field of service development is young in

comparison with that of product development and only selectively researched. This opens the avenue for further value-adding studies to improve the understanding of aspects interrelating with new service development and provide a useful approach to a successful new service development strategy.

## **Objective**

The objective of this article is to explore mainly marketing literature to identify commonalities between different authors on the subject area. Special attention is given to critical success factors and aspects proposed as an approach for a service development strategy.

This literature study represents an attempt to integrate aspects relating to new service development in order to provide a useful approach on which strategies for successful new service development can be based. The telecommunications industry is used as an example because of the innovative strategies it uses in developing new services, especially in mobile telecommunications.

## **New service development**

### **Service versus product development**

Differences between product and service development are identified by Storey & Easingwood (1998), who argue that, unlike companies that produce tangible goods, service firms typically cannot rely on product advantage as a means of

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ensuring the success of a new service. The fundamental difference between new products and new services implies that managers that strive to find the keys to the success of new services must look at factors other than sustainable product advantage. It is suggested that managers need to understand the totality of the service offering from the customer's perspective. It is explained that the purchase of a service is influenced not only by the service itself, but also by such factors as the service firm's reputation and the quality of the customer's interaction with the firm's systems and staff – in other words, by the augmented service offering.

Bitran & Pedrosa (1998) identify similarities in the creation and evolution of products and services in a literature review on product development from a services perspective. Three types of knowledge that are commonly required in the development process are discussed:

1. The sequence of steps or procedural plan that must be followed
2. The understanding of the components that integrate the design and how they interact
3. The principles and models that describe physical or human behaviour in the system that is being designed.

Butler & Abernethy (1994) suggest that there is "purchase specific" information which consumers prefer for services and goods respectively. However, there is little difference in the general categories of information consumers seek in advertisements. The general categories of value, availability and contact personnel are important in advertisements for both services and goods.

Palmer (1998) postulates that the intangible nature of services makes it relatively easy to introduce slight variants to an existing service.

Kasper, Van Helsdingen & De Vries (1999) contend that new services can be market-driven or technology-driven (market pull versus technology push). Market-driven innovations may result from better serving the needs of customers (for example, Businessman's McDonalds in the USA) or more technology in the service delivery process (for example, computer help desk by telephone).

Peters (1999) identifies quality and the diversity that it brings as critical to service innovation and improvement, and suggests that dynamic questioning (that provokes change) should lead the organisation to answering to the needs of the customer, but also enabling them to see the future.

#### Critical success factors and checklists

Each year, entrepreneurs introduce thousands of new products and services to the public. Only a small percentage of new ideas and inventions survive beyond the first year. Critical success factors and checklists for successful introduction of products and services in the market have been discussed in several papers.

In her article on the role of new product development and competitive performance in the marketplace, Foreman (1998) identifies two fundamental strategies, which are considered as the foundations of marketing to deliver value to customers, namely, a commitment to customer orientation and innovation. Foreman further suggests that managers need to balance enthusiasm for innovation with thorough processes in order to reduce the potential for product failure. Indeed, it is suggest-

ed that organisations should look beyond the tactical focus on the product and emphasise the strategic and organisational issues that help to create a culture for innovation. After the launch comes the transition from existing to new products, with renewed marketing emphasis on the future of the new product.

Schilling & Hill (1998) maintain that, for many industries, new product development is now the single most important factor driving an organisation's success or failure. The emphasis on new products has spurred researchers from fields such as strategic management, engineering, marketing and other disciplines to study the new product development process. Most conclude that in order to be successful at new product development, a firm must simultaneously meet two critical objectives: maximising the fit with customer needs and minimising time to market. According to Schilling & Hill, successful firms are those that articulate their strategic intent and map their R&D portfolio to find a fit between their new product development goals and their current resources and competencies. Other imperatives include using a parallel development process, both to reduce cycle time and better incorporate customer and supplier requirements in the product and process design, and to use executive champions to ensure that projects gain the resources and organisational commitment necessary to their completion.

Service organisations cannot continue to rely on their existing product mix for ongoing success. With increasing globalisation and increased competition, organisations will increasingly find it difficult to survive just on their past successes, but will need to continually innovate and strive for the creation of new ideas and new services (Kelly & Storey 2000).

Terrill (1992) emphasises that service companies need to cultivate and utilise appropriate principles of leadership, communication and feedback in order to develop successful new offerings. He suggests ten basic commandments that can truly drive the new service development process towards successful results:

1. Thou shalt know and define thy service offerings.
2. Thou shalt worship only new service strategies tied to business strategies.
3. Thou shalt love thy formal, yet flexible, development process.
4. Thou shalt covet thy multifunctional team members.
5. Thou shalt commit thy new ideas to tangible communication vehicles.
6. Thou shalt not allow competitors to easily steal thy new service concepts.
7. Thou shalt honour the role and sanctity of market feedback.
8. Thou shalt not bear false quality at time of launch.
9. Thou shalt measure quality through customer satisfaction.
10. Thou shalt witness the coming of a new service paradigm and it shall be called value delivery.

According to Bell (1992), the essence of service distinction is a human feeling. When the delivery of a service is over, the receiver is left, not with an object, but with a memory of dazzlement, pleasure, satisfaction, disappointment or victimisation. The initial step in creating a new or improved way to deliver service is to clearly identify the feelings that the customer is to experience when doing business with an organisation. The actions required to evoke a given set of feelings in

one customer may be slightly different from those required for another. The following questions were proposed to provide insights into how to create new ways to get service to customers:

- What emotions and feelings are likely to entice the customer back?
- What other service provider has produced those emotions and feelings?
- What is a specific customer service need that requires a service delivery system that can be improved or invented?
- How would the designer of the great service memory model design such a service delivery system?

The flowchart in Figure 1 shows the planning, creation and delivery of new services.

A checklist for product development published by B&G Marketing Services Inc. (*American Salesman* 1993) includes:

- Define the ultimate geographic market for the product
- Identify the product's strengths, weaknesses, costs and quality issues
- Analyse and learn from the successes and failures of other product introductions
- Check which market segment is available for the product or service
- Examine the opportunity to achieve quality through less expensive production processes
- Develop a monthly operating budget for the first year and provide three years' worth of projected quarterly balance sheets and profit or loss statements
- Consider various advertising options.

Lester (1998) identifies 16 critical factors in the following five areas on which the success of new product development effort hinges:

1. Senior management commitment, which is a key prerequisite for success
2. Organisational structure and processes that support the venture
3. Attractive new product concepts being available for development
4. Venture teams with appropriate staffing and resources, able to communicate effectively with management and markets
5. Project management able to focus on reducing uncertainties as early as possible.

Lester maintains that attention to these factors during the early stages of new product development allows managers to save significant time and money while reducing delays and risks.

According to Khazanet (1997), product development planning is often based on managerial intuition and experience and that all too often, time saving and cost-effective solutions – such as finding and hiring alternative designers, sub-designers, researchers and suppliers from other countries, and leasing other facilities equipped with state-of-the-art equipment – are simply overlooked. The author comments that planning and balancing of product development phases are becoming more valuable as developers try to keep up with new technology, stay ahead of the competition, retain customers and

attract new customers. The main steps in product development include:

- Preparing feasibility analyses
- Preparing detailed drawings, plans, specifications and cost estimates
- Approving the product
- Advertising the product
- Requesting bids
- Awarding prime manufacturing contracts
- Manufacturing the product
- Implementing quality control measures.

Cooper & Kleinschmidt (1995) refer to the management of new product development as a process of separating the winners from the losers. They suggest that benchmarking is helpful for identifying the critical success factors that set the most successful firms apart from their competitors. They propose that the following elements influence a company's overall new product performance:

- The new product development process and the specific activities within that process
- The organisation of the new product development programme
- The firm's new product development strategy
- The firm's culture and climate for innovation
- Senior management commitment to new product development.

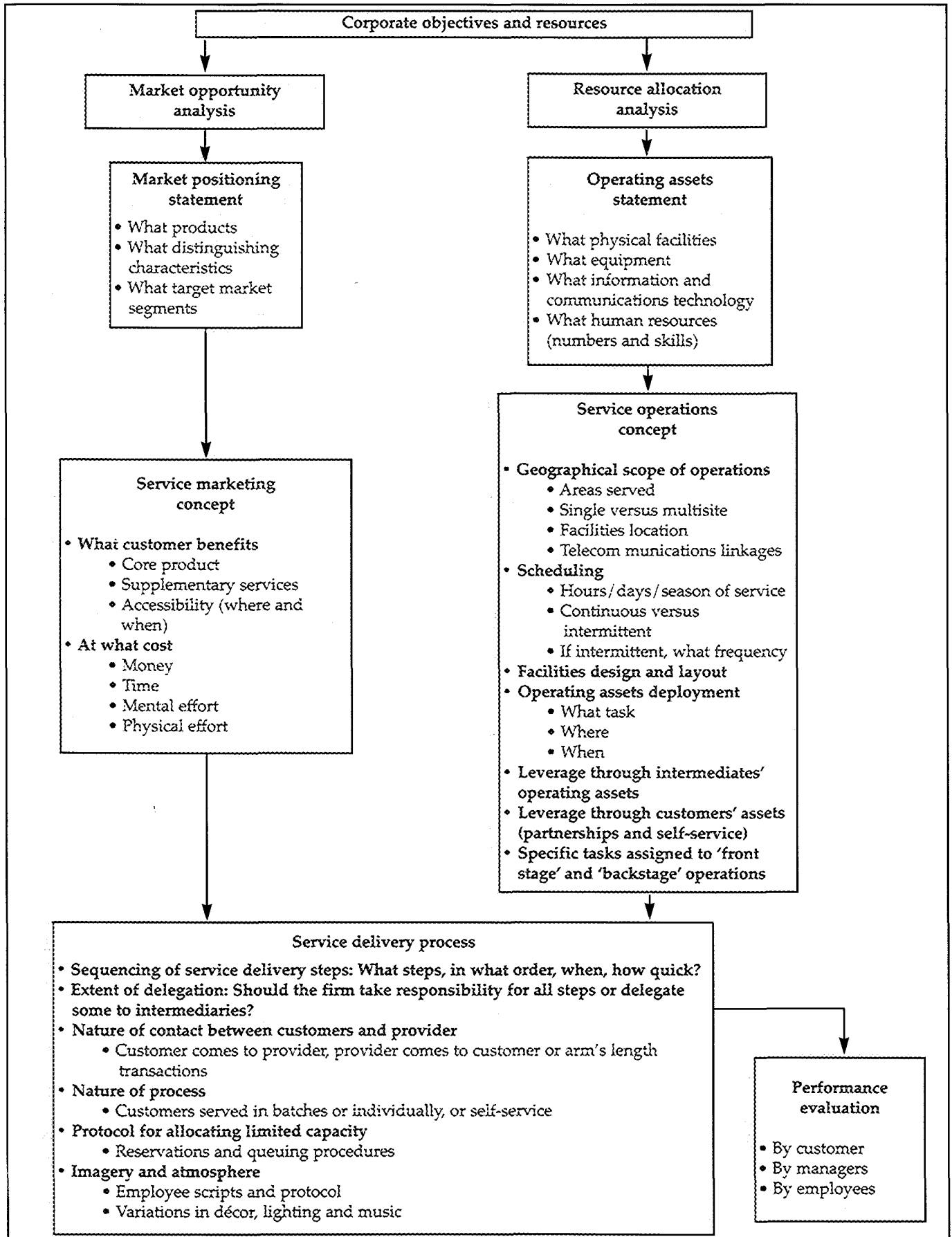
They identify nine constructs that drive performance:

1. A high quality new product process
2. A clear, well-communicated new product strategy
3. Adequate resources for new products
4. Senior management commitment to new products
5. An entrepreneurial climate for product innovation
6. Senior management accountability
7. Strategic focus and synergy
8. High-quality development teams
9. Cross-functional teams.

Cooper (1994) identifies key success factors that distinguish successful projects from commercial failures: product superiority, quality of marketing, detailed up-front homework, picking attractive markets, right product definition, proper planning and resourcing of the launch and the better performance of synergistic products. Although the study focuses specifically on the chemical industry, the results appear to be generally applicable to moderate to high-tech industries.

Dimanescu & Dwenger (1996) refer to product development as a minefield in which there are five times as many failures as successes. They suggest six widely shared problems that can inhibit the success of even the best product-development teams: customer needs not well defined or understood, errors found too late, management by interference, too many projects, burnout and poor communications.

Jenkins, Forbes, Duranni & Bannerjee (1997) indicate that a company's chance of success in launching new products is



Source: Lovelock (1996)

Figure 1. The planning, creation and delivery of new services

dependent upon the management of the new product development process. Methodologies for new product development are investigated, including phased development, stage/gate models, product and cycle-time excellence, and total design.

#### **Customer orientation and service quality**

Foreman (1998) regards customer orientation as one of two key fundamentals to deliver value to customers and as a key success factor to new service development. Schilling & Hill (1998) also regard maximising the fit with customer needs as one of the two critical objectives that must be met in product development. Cermak, File & Prince (1994) argue that customer participation in the specification and delivery of the services they seek represents an important point of potential leverage for service providers, as the nature and intensity of customer participation is within their ability to manage. Their study results confirm that participation is strongly associated with repurchase and referrals in some service settings. Martin & Horne (1995) find significant differences in the innovation level of success within the same firm. Inputs from customer contact personnel are considered as superior to those of non-contact personnel.

Quality issues feature twice in the ten commandments for service development by Terrill (1992) and can indeed be regarded as crucial to the process. Quality can also be considered as the most common denominator in the checklists on product development success factors.

Empirical studies in Sweden by Edvardsson & Olsson (1996) suggest that the goal is to build in the right quality from the start. It is argued that the main task of service development is to create the right generic prerequisites for the service. This means an efficient customer process, which must be adapted to the logic of the customer's behaviour and a good customer outcome (in other words, the service is associated with quality). In a later paper, Edvardsson (1997) again focuses on designed-in quality. The outcome of the service development process constitutes the prerequisites for the service by the service concept, the service process and the service system and resource structure. The service is produced in a customer process in which customer, company and subcontractors are actors. The quality of the process is controlled by the prerequisites each actor takes into the customer process. Service development must coordinate the development of concept, process and system where each aspect requires special treatment.

Edgett (1994) reports that the development activities are more rigorous and comprehensive for successful new services than for failures. Many companies attempt to develop too many projects simultaneously and spread their resources too thinly. The alternative is to develop and launch fewer, better-developed new services with sufficient resources allocated to execute the project effectively. Organisations that use a systematic process of well-defined development stages tend to have a higher probability of successful outcomes. Gaining a firm understanding of the needs and wants of the targeted consumer group is also well accepted as critical to success.

#### **Service innovation, creation and improvisation**

As mentioned before, innovation is regarded as fundamental to delivering value to customers and a key success factor to new service development (Foreman 1998). According to Lynn, Morone & Paulson (1996), companies that compete effectively

over the long run in technology-intensive fields exhibit ability for both continuous and discontinuous innovations. Discontinuous innovations, which lead to the creation of entirely new businesses and product lines, pose a unique set of challenges for management. They typically require a long, investment-intensive process, marked by pervasive uncertainty, unpleasant surprises and no guarantee of success.

Lovelock (1996) adapts the following categories of product innovation, running from major innovations to simple style changes, for use in the service context:

- Major innovations are new products for markets as yet undefined and undimensioned, for example, FedEx's introduction of nation-wide, overnight package delivery.
- Start-up businesses consist of new products for a market already served by products that meet the same generic need, for example, outpatient surgical centres for same-day surgery as an alternative to overnight hospitalisation.
- New products for the currently served market represent an attempt to offer existing customers a product that the firm did not previously offer, although it was available elsewhere, for example, retail banks that add insurance services.
- Product line extensions are additions to the current product line or distinctive new ways of delivering existing products, for example, new menu items in a restaurant.
- Product improvements are the commonest type of innovation, involving changes in the features of current products, for example, improvements to the core service, such as faster execution.
- Style changes represent the most modest type of innovation, although they are often highly visible, for example, repainting aircraft or new uniforms for personnel.

Moorman & Miner (1998) discuss the common assumption that marketing strategy should occur by first composing a plan on the basis of a careful review of environmental and organisational information and then executing that plan. However, there are cases when the composition and execution of an action converge in time so that they occur simultaneously. Moorman & Miner define such a convergence as improvisation. They develop hypotheses to investigate the conditions in which improvisation is likely to occur and be effective. These hypotheses are tested in a longitudinal study of new product development activities. Results show that: organisational improvisation occurs moderately in organisations, organisational memory level decreases, and environmental turbulence level increases the incidence of improvisation.

Wyner (1998) argues that the conventional wisdom about new product development suggests a well-defined process in which marketing research methods are applied in an orderly way at specific points in time. When the rules are followed, successful new products are supposed to emerge from the end of the process. He suggests an alternative view of this process as not very orderly or fast and notes that the use of traditional methodologies has not proven especially effective.

The view of Edvardsson, Haglund & Mattsson (1995) is that creativity and innovation cannot rely only on planning and control. They believe that there must be some elements of improvisation, anarchy and internal competition in the development of new services.

Research on how new ideas are generated, quoted by Kelly & Storey (2000) indicates that approximately 80% of banks view their competitors as the main source of new ideas.

### **Development speed**

Minimising time to market is one of the two most critical product development objectives defined by Schilling & Hill (1998). In the race to get to market first, Towner (1994) suggests that old product development models must be discarded. Sequential development and hand-over-the-wall practices are too slow. Time must be cut out of the process. An accelerated product development programme must be established to streamline and undertake activities in parallel, to launch the product simultaneously in world markets, and to release enhanced supporting services and business processes after launch.

Adler, Mandelbaum, Nguyen & Schwerer (1996) suggest that managers think of product development as a production process in which projects move through the knowledge-work equivalent of a job shop. According to the authors, companies that have applied process management to product development have made three important discoveries:

1. Projects get done faster if the organisation takes on fewer at a time.
2. Investments to relieve bottlenecks yield large time-to-market benefits.
3. Standardisation does not kill creativity. The authors maintain that companies that have embraced this approach have cut average development times by between 30% and 50%.

Roche (1999) reports that sequential engineering for product development has been largely replaced by concurrent engineering, in which teams of engineers work simultaneously to design the various components of a product. With concurrent engineering, companies can get products to market much faster than they could before. However, the disadvantage of concurrent engineering is that it introduces considerable uncertainty into the development process. In observing concurrent engineering, researchers found that engineers intuitively use two different strategies for communicating information, namely, an iterative strategy and a set-based strategy.

### **Service analysis**

Service analysis is regarded as crucial to successful new service development, as illustrated by the first commandment of Terrill (1992): "Thou shalt know and define thy service offerings".

While innovation is considered as risky and complex, involving major resource investments and a high rate of failure, studies by De Brentani (1995) show that managers reduce the complexity surrounding individual decisions by viewing these in a gestalt or situation-specific mode. Hence, knowing the types of new service development situations, or scenarios that typically lead to success and failure, is an important requisite for making superior decisions.

A study by Langford & Cosenza (1998) shows that a service product can be analysed using knowledge of the product and application marketing literature to determine which of a service product's marketing characteristics are more like a good than a service. It is suggested that such determination allows researchers and strategists to more effectively use secondary research on both goods and services in developing projects and tasks, even for service products that are considered pure services.

Lovelock (1996) proposes a step-by-step flowcharting (also called mapping or blueprinting) of the constituent service processes. This could ensure that the service provider understands the full extent of the relationships with the customers and prevent customers from getting 'lost' and feeling that nobody knows who they are and what they need. The following key steps are proposed:

- Define the purpose of the flowchart clearly, especially the expected learning points.
- Identify each interaction that a particular type of customer has when using a specific service. The core product must be distinguished from the supplementary service elements.
- Chart the interactions in sequence to flow like a river. At each step, the following questions should be asked: (a) What does the customer really want? (b) Where is the potential failure at this step?
- For every front-stage activity, chart back-stage supporting activities.
- Validate the description with inputs from customers and service personnel.
- Supplement the flowchart with a brief narrative describing the activities and their interrelationships.

### **Service marketing strategies and tactics**

Because services cannot be stored, temporary imbalances between supply and demand present a difficult challenge for managers of service firms. Shemwell & Cronin (1994) discuss two categories of strategies: foreseeing the unforeseen by improving market intelligence, and lessening the intensity of the negative consequences of supply/demand non-equilibriums by increasing flexibility and sharing risks.

Reddy, Buskirk & Kaicker (1993) suggest that a key to success in services marketing is to 'tangibilise' the intangible. Each firm differs from others in the manner it chooses to 'tangibilise' its service mix. Some firms try to portray a physical object. Despite the method selected, consistency in maintaining quality is very important. Once 'tangibilised', that image must be consistently maintained.

To successfully sell a service, Baker (1996) suggests that the service should be 'productised' rather than defined. The idea behind 'productising' a service is to actually make a service into a tangible product. For a large portion of services, the deliverable is a report. After the specifications are developed for a service, all efforts should be put into creating a professionally designed report template, coloured whenever possible, graphically representing the data in charts and tables.

Kotler (2000) reports that value for a customer is about the resulting experience customers will have from the provider's offering.

According to Lovelock (1996), technology allows the benefits that formerly had to be delivered by service staff in a real-time environment to be captured in a physical product. Services that are transformed into goods, allowing customers to unlock the value through self-service, are referred to as 'frozen services', for example, videotapes of live performances.

According to Karlgaard (1998), a sure sign that a technology company is mature is when service income grows faster than product income. The author maintains that this would be the wrong time to pursue service-income growth.

By focusing on the benefits to the consumer, Duncan (1992) maintains that a new product or service becomes market-driven rather than entrepreneur-driven. Once the businessperson has an understanding of the need that is being addressed by the product or service, he or she can define a target market group. The businessperson should determine what target group would most value the benefits of the product in economic terms and be able to give a detailed profile of this group, including age, abode, gender and economic status. Market research may be either primary or secondary.

#### **Ethical issues**

Perreault & McCarthy (1996) report that members of the American Marketing Association (AMA) subscribe to a code of ethics containing the following elements to uphold and advance the integrity, honour and dignity of the marketing profession:

- To accept responsibility for the consequences of their activities, not knowingly to do harm and to adhere to all applicable laws and regulations
- To give accurate representation of their education, training and experience
- To be honest in serving consumers, clients, employees, suppliers, distributors and the public and not knowingly participate in conflict of interest without prior notice to all parties involved
- To be fair by establishing equitable fee schedules, including the payment or receipt of usual, customary and/or legal compensation for marketing exchanges.

In the area of product development, the following topics are embraced in the AMA code of ethics:

- Disclosure of all substantial risks associated with product or service usage
- Identification of any product component substitution that might materially change the product or impact on the buyer's purchase decision
- Identification of extra-cost added features.

Perreault & McCarthy (1996) further report on the following ethical issues revolving around new product decisions or decisions to abandon old products. Being insensitive to these factors might lead to a negative backlash that affects the firm's strategy or reputation:

- Holding back important new innovations until patents run out – or sales slow down – on existing products
- 'Planned obsolescence' – releasing of products that the company plans to replace soon with improved new versions
- Keeping new-product introduction plans secret, leaving wholesalers and middlemen with dated inventory that they can sell only at a loss
- Leaving consumers unable to get replacement parts for abandoned products
- Constantly releasing minor variations of products in already saturated markets, which could be perceived as a ploy for more shelf space
- Making it impossible for some consumers to make an informed choice among the bewildering array of product choices.

#### **Telecommunications industry**

The telecommunications industry is used as an example because of the innovative strategies used in developing new services – especially in mobile telecommunications. A similar structure is used to the previous section.

#### **Customer orientation and quality**

Oringer (1993) states that the successes of the cellular industry have been impressive, but that users are demanding more, including business system-type services, timely and accurate billing and lower costs. The cellular wireless communications industry is ready to make the transition from simply getting networks up and running to managing operations that are more responsive, competitive and profitable.

According to Lannon (1995), it is absolutely essential for cellular service providers to start learning about customer care. Cellular customers do not change carriers arbitrarily. Soon the day will come when all network services will have to know as much about consumer preferences as retailers or entertainment companies do today.

O Shea (1997) suggests that wireless network operators, for all their work, are not yet masters of their domains. They must still work to extend coverage where it does not yet exist. They also have to make sure that enhanced services are consistently available and well supported by customer service provision.

According to Drummond (1998), the world of the telecommunications industry is changing from one in which its services and network capabilities took centre-stage to one in which the full focus of attention is on customers and their needs and wishes. The hub of this new world is no longer the network, but rather the customer interface. In this new customer-centric telecommunications world, pricing and packaging of services is just as important as their technical capabilities. Customers want prices that are aligned with the benefits they get from a product or service.

Potter (1999) contends that the frenetic pace of cellular growth today exacts its toll on all levels of the network. For cellular operators, the most pressing issue is optimising the network to deliver both performance and quality of service that will ensure customer satisfaction and prevent their turning to a competitor's network. Industry predictions forecast more than 530 million cellular network subscribers worldwide by the year 2001. There is no magic formula to ensure that a network design delivers optimised performance. The winners in the competitive mobile telecommunications industry will, first and foremost, be operators that can ensure the kind of quality and network performance that customers appreciate and demand.

Ogawa & Ketner (1997) report on the 1996 World-wide Telecommunications Product Development Benchmarking Study, launched by Pittiglio, Rabin, Todd & McGrath, who investigated three key areas of product development excellence: time-based performance, development effectiveness and cross-project management. The results show that service providers that achieve best-in-class performance can gain a significant competitive edge in a number of areas, such as delivering products to market more swiftly, generating greater revenue from new products, and minimising lost product development costs. An important factor in achieving a competitive edge is the efficient use of funds to develop new prod-

ucts. Each company must decide the areas in which it wants to be above average and the areas in which being merely competitive is sufficient.

In South Africa, the mobile telecommunications industry has, since its inception six years ago, primarily focused its strategies on customer acquisition in order to grow its customer base. However, as the South African customer becomes increasingly demanding, the industry will have to shift its strategic focus to encompass a retention strategy, particularly for its most valuable and profitable customers, in order to prevent them from turning to the competition (Slongo 1999).

Bolton (1998) models the duration of the customer relationship with an organisation that delivers a continuously provided service such as telecommunications. In the model, it is hypothesised that cumulative satisfaction serves as an anchor that is updated with new information obtained during service experiences. The model describes cellular customers' perceptions and behaviour over a 22-month period.

The results indicate that customers' satisfaction ratings elicited prior to any decision to cancel or stay loyal to the provider are positively related to the duration of the relationship. The strength of the relationship between duration times and satisfaction levels depends on the length of the customer's experience with the organisation. Customers with many months' experience with the organisation weigh prior cumulative satisfaction more heavily and new information relatively less heavily. The duration of the relationship between the service provider and customer also depends on whether customers have experienced service transactions or failures. The effects of perceived losses arising from transactions or service failures on duration times are directly weighed by prior satisfaction, creating contrast and assimilation effects.

It is a misconception that organisations that focus on customer satisfaction are failing to manage customer retention. Bolton (1998) suggests that service organisations should be proactive and learn from customers before they defect by understanding their current satisfaction levels.

In the South African situation, one can surmise that the introduction of new service packages, especially in the cellular telecommunications industry, has been part of a strategy to attract new segments of the market as well as to provide a broader product range to existing customers.

#### Market segmentation

According to Brown (1993), the mobile telephone industry is in transition in the United Kingdom. The big question is whether the transition is evolutionary or revolutionary. Vodafone, the largest cellular radio operator, believes in evolution, while Cellnet and newcomer Mercury One-2-One are revolutionaries. Vodafone believes that the lion's share of demand for some years ahead will continue to come from business. In contrast, Cellnet believes there is a pent-up demand in the domestic sector, waiting to be released by lower prices. Cellnet, along with Mercury One-2-One and Hutchison, are convinced that a breakthrough into the mass market is not only possible but imminent. Stafford Taylor, managing director of Cellnet, predicts that demand for the mobile phone will follow the pattern set by video recorders. Richard Goswell, managing director of Mercury One-2-One, thinks that the fall in fixed costs may come sooner than anyone had previously thought possible.

Cairncross (1997) maintains that the mobile telephone has been the mainstay of the telecommunications revolution over the past five years. A decade ago, the market hardly existed. Now, more than half of all new telephones worldwide are mobile. The growth in some developing countries has been even more remarkable. For telephone companies, the shift to mobility has changed the composition of their revenues. They make money in two ways: through their own mobile subsidiaries and by charging for access to their networks. The mobile segment is the fastest growing one in the telecommunications industry. One market that has done less well than expected is the USA. Overall, competitive pressures will cause a number of changes in the industry.

According to Marbach (1998), a global technology transformation is being driven by the interaction of two forces, namely, improvements in computing power, and the expansion of global communications networks. In the software markets, some of the most important trends involve communications and the growth of the small office and home office market. Use of the Internet for commerce, financial transactions, news and information is still in the earliest stages, but it is already clear that having a first-rate site is a key asset in the newly developing digital economy.

The South African situation in the cellular telephone market is characterised by fierce competition over entry into new segments of the market that are not currently serviced by fixed line products. Products such as Vodago and Companion entered a segment where it was not required to have up-front proof of financial credibility.

#### Competition

Fisher (1992) maintains that, once the industry gains momentum, wireless voice, data and imaging services such as pocket telephones, portable telefax machines and hand-held computers or personal organisers will start to compete with, as well as complement, existing wire-based and cellular telephone services.

Oskarsson & Sjoberg (1994) examine the validity of the strategic implications drawn from the typology of generic strategies presented by Michael Porter. It is argued that the existence of technologies that simultaneously drive cost and performance make it possible to combine cost leadership and differentiation strategies, yet be extremely competitive. The mobile telephone industry provides an illustration, exhibiting a 'luck in the middle' strategy, rather than a 'stuck in the middle' strategy.

Bridge (1998) refers to the South African cellular network as a white-owned duopoly, which has been smashed by a government decision to open the \$2.1-billion-a-year industry to competition by awarding more licenses, most likely to black-controlled groups. While most accept that the awarding of the licenses must be distorted deliberately to achieve social and political goals, there are still deep-seated concerns over unfair advantages that the new operators could enjoy.

The South African cellular telecommunications industry has for the past six years been heavily focused on acquisition as the incumbent networks are strategising for position, and this is still the case. However, this is changing as customers are become more informed and more demanding. In addition, a third network operator will be entering the industry this year, which means increasing competition and in turn results in increased choice for customers. The fixed-line operator will also



face competition in the medium term when the current licence of operation changes and new competitors enter the market.

### **International services marketing**

Exported services are, according to Fugate & Zimmerman (1996), the fastest growing sector of global exchanges, not only for the industrialised leaders but for many newly industrialising countries and lesser developed countries as well. Ironically, regulation of this important international trade sector has been a virtually ad hoc effort as nations have negotiated, measured and controlled the international economic arena almost exclusively in terms of manufactured goods.

Interest in services marketing continues to grow around the world, but Hayes (1994) comments that the relative rate of growth is higher outside the USA as other industrial or industrialising countries move to catch up. Where consumer services are concerned, culture may shape not only the expectations of how service should be delivered, but also traditions governing relationships between providers and customers.

### **Protecting intellectual property**

The protection of intellectual property is a burning issue during the development of a new service, as illustrated in the sixth of Terrill's (1992) ten commandments for new service development: "Thou shalt not allow competitors to easily steal thy new service concepts."

#### **Requirements for patent protection**

McKeefry (1998) suggests that there are two requirements for protecting a patent: the invention must be new and the invention must be useful. There is no requirement that the idea be economically or commercially viable. Although major corporations such as Microsoft Corporation and Intel Corporation account for the lion's share of patents granted each year, the United States Patent Office helps and encourages individuals to protect their work. Small entities – which include individuals, small companies, non-profit organisations and universities – are charged only half the usual patent filing fee. Before filing a patent, individuals should decide whether a patent is really needed, since a patented invention may never generate enough income to pay for the patent process itself, much less garner huge revenue streams. Sometimes the technology will be obsolete before the patent process is complete. In these instances, inventors have other invention-guarding options, such as keeping it a trade secret or obtaining a trademark or copyright. Inventors may have to patent their ideas in several countries to ensure that no-one will be able to use their technology.

Udpike (1998) reports on a recent court appeal in the USA in which it was held that a business method that uses a mathematical formula could be patented as long as it meets the three traditional criteria for legal protection:

1. That it is new
2. That it is useful
3. That it is not obvious to someone with knowledge in the field.

The court noted that Congress intended the Patent Act to extend to anything under the sun that is made by man. The ruling has generated a whirlwind of controversy. Critics fear that the decision will give some patent holders huge windfall profits, while at the same time slowing the spread of valuable commercial innovations.

#### **To patent or not?**

Mazzoleni & Nelson (1998) propose that there are several broad theories about the principal purposes patents serve:

- The anticipation of patents provides motivation for useful invention (termed the "invention motivation" theory).
- Patents induce inventors to disclose their inventions when otherwise they would rely on secrecy, and in this and other ways facilitate wide knowledge about and use of inventions (termed the "invention dissemination" theory).
- Patents enable the orderly exploration of broad prospects (termed the "exploration control" theory).

Millonzi & Passannante (1996) suggest that there are several things a company can do to protect its intellectual property. Some methods require legal support; others can be handled by strong company policies. Registering trademarks, trade dress and copyrights with the Patent and Trademark Office or US Copyright Office provides valuable protection, such as the right to sue in the federal court and a number of other remedies, including statutory damages, attorney fees and constructive notice of ownership. In addition, US protection provides a basis for foreign registrations. Other methods for protecting intellectual property include implementing a controlled process for reviewing the proposed (and unauthorised) use of one's marks by others.

According to Brown (1998), entrepreneurs can increase their chances of successfully commercialising their inventions by arming themselves with knowledge by following the following procedures:

- Safeguarding the invention from the start
- Protecting oneself with a nondisclosure agreement as well as a patent
- Considering allowing the company to oversee the patent process
- Considering licensing the invention rather than assigning (selling) it.

Retsky (1997) postulates that many people do not understand the difference between trademarks, patents and copyrights. The three terms are often used incorrectly or even interchangeably. The most important distinction among patents, trademarks and copyrights is the basis for and the scope of the protection. Another difference is the length of time that legal protection lasts.

Mann & Canary (1993) propose that three kinds of patents exist: utility, design and plant. To determine if an idea should be patented, they suggest that the owner should consult a patent attorney.

Horwitz (1993) recommends that a company register its intellectual property trademark or patent in three types of jurisdictions: significant markets, manufacturing locations and counterfeiting locations. A trademark owner must be vigilant in identifying others that have registered or are using similar marks. Patent enforcement need not be as vigilant.

The simple truth of innovation, according to Hsu (1998), is that any effort to make an invention can almost always be done more cheaply and more easily by someone else. As a result, a scheme of unrestricted copying would lead to a situation in which inventors could not recover the cost of their invention and the financial incentive to invest in any research would cease. However, the importance of having a strong

patent system goes beyond encouraging and protecting innovation; it is directly related to the standard of living.

Today's conventional wisdom, according to Mazzoleni & Nelson (1998) is that strong patent rights are conducive to economic progress. Yet not long ago, students of the patent system took a more nuanced position, arguing that often, strong patents are not necessary to induce invention, and entail significant economic costs. Several empirical studies have supported this position. There is reason for concern that the present movement towards stronger patent protection may hinder rather than stimulate technological and economic progress.

### Trends in intellectual property

According to Edson (1997), several developments in today's fast-moving technological world have defined new roles for patents. Firstly, globalisation, the shaper of the American economy during the 1980s, has made patents more valuable on an international basis as companies scramble for market presence in scores of developed and developing countries. Secondly, the booming expansion in deregulation in South Africa has lifted competition to a way of life virtually everywhere, automatically giving an edge to a company that can milk the largesse of its patents at every stage in their life, from birth to expiration. Thirdly, patent law has shifted in favour of the inventor.

Protection of intellectual property is crucial to prevent competitors from stealing inventions and new service concepts.

### Conclusion

The literature survey indicates that new services cannot depend for their success on sustainable advantage. The totality of the service offering (the augmented service offering including, for example, interaction with the firm's systems and staff) must be understood from the customer's perspective.

The types of knowledge that are commonly required in the development of a service are similar to those needed for product development. General categories of value, availability and contact personnel are important in both services and goods advertisements.

Critical success factors for product development are a commitment to customer orientation (maximising the fit with customer needs); innovation and minimising time to the market.

The literature review reveals only a few common denominators between new product and new service development, namely: quality issues, feasibility analyses, senior management commitment, planning issues, market segmenting and high quality venture teams.

It is concluded that:

- Customer orientation is a fundamental key success factor in service development.
- Customer participation in the specification of services provides potential leverage for a service provider.
- Participation can be strongly associated with repurchase and referrals in service settings.
- Customer contact during the service development process can enhance the innovation level.
- Service quality is to adapt the process to the logic of the customer's behaviour and to achieve a satisfied customer experience.
- Designed-in quality right from the start is crucial to the success of service development.

- Fewer, well-developed services can be far more successful than many less fully developed services.

Innovation is a fundamental key success factor in service development. Six categories have been defined for product innovation in the service context:

1. Major innovations
2. Start-up businesses
3. New products
4. Product line extensions
5. Product improvements (the commonest type of innovation)
6. Style changes.

From the citations on innovation, it can be concluded that chaos theory could provide a better understanding of innovation in service development because the process is marked by pervasive uncertainty, the increasing incidence of improvisation caused by the level of environmental turbulence, the fact that the process is not very orderly, and the presence of elements of anarchy.

Subscription to a code of ethics for the marketing profession is important to uphold and advance the integrity, honour and dignity of the profession and to gain a name for being honest, fair and accepting of responsibility for the consequences of the service developed. During the new product planning phase, sensitivity towards ethical issues is important so as not to gain a reputation for holding back important new innovations.

In the case of new service development, it is not possible to apply all the principles and practices to protect intellectual property, but it is surmised that the organisation can maintain a competitive advantage with new services by encapsulating and integrating them in internal expert systems, software and firewalls to entry. Internal safeguarding and confidentiality of systems are obvious policies.

### Future research

Future research is necessary to explore the following:

- The methods that service organisations use to protect intellectual property
- The effectiveness of such measures
- Whether the process for the development of tangible new products development differs from the development process for new services
- Whether there are differences between service industries regarding new service development
- How multifunctional teams are used in new service development
- How research is used in identifying new customers needs in the service industry.

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