

MODELLING PROCESS OF NEW MEDICAL SERVICE IDEAS GENERATION

Rolandas Drejeris¹, Eglė Tvarijonavičienė²

¹*Vilnius Gediminas Technical University, Faculty of Business Management,
Saulėtekio ave. 11, LT-10223 Vilnius, Lithuania
Email: rolandas.drejeris@vgtu.lt*

²*Lithuanian University of Health Sciences, A. Mickevičiaus str. 9, LT 44307 Kaunas, Lithuania
Email: e.tvarijonaviciene@delfi.lt*

Abstract. Medical Many medical practice administrators and marketing directors respond to patients and medical personal touches in order to find new service ideas. Organization can implement one or several ideas, but they can reveal one to be wrong and do not achieve patients' satisfaction. So, one of the most difficult steps in the process of new service development is the first – idea generation. Many medical organizations' (and scientific also) ideas arise without any aid of disciplined procedures. It is offered to use model for better ideas generation, which provides clarifications of necessary procedures based on the researchers' opinions, which are assessment in terms of logic and adaptability.

Keywords: model, service ideas, new service, medical organizations, patients.

Jel classification: O31

1. Introduction

The continuous hegemony of innovation and creativity arises from organizations recognizing that correctly harnessed creativity can offer companies a competitive advantage. The most appropriate new services will be those that meet customers' needs more effectively than competitors' services, and are therefore preferred by more customers. It is note not only for business, but for public organizations also. Organizations need to identify those needs, and then generate ideas and solutions to address them (McAdam, McClelland 2002). Organization can implement one or several ideas, but they can reveal one to be wrong and do not achieve customers' satisfaction. So, one of the most difficult steps in the process of new service development is the first – idea generation. Generally speaking the term “idea” can be defined as something that is unrealized, unproven or untested. But ideas can be generated with help of creativity, and innovation is needed in order to realize something based on new idea. Creativity and idea generation can be described as divergent thinking just as innovation can be described as convergent thinking (Gurteen 1998). For many organizations a ‘call for ideas’ is the first step on their innovation journey. More often than not, such calls result in a flood of ideas; many people in the organization will have been waiting for an opportunity to bring forward the great idea they have had for a long time. Not many organizations launch into new medical service ideas suggestion schemes with firmly established assessment criteria set out.

Therefore sometimes medical organizations do not really know what kind of ideas is wanted and they often do not understand why their ideas are being selected or rejected. Some commercial and public companies manage to generate new service ideas by using appropriate methods and obtain right results, whereas many medical organizations' (and scientific also) ideas arise without any aid of disciplined procedures. Not many organizations provide sufficient manpower to review and asses the flood ideas in a timely manner (Stam 2008). Many medical practice administrators and marketing directors respond to patients and medical personal touches in order to find new service ideas. The medical services context is well suited to the study, since medicine can be considered an archetypal professional service (Hogg *et al.* 2003). Recent efforts to provide an annual profile of the health care quality of the nation's health care delivery system and to identify health care disparities in the population's access to and use of health care services have served to stimulate design innovations and content enhancements. Idea generation is important step, because new idea or ideas are the starting point for new service developing. Unsatisfactory processes of new service ideas generating in a medical organizations are called as a problem of the article. Its purpose is to present a model for better ideas generation at the medical organizations, which would determined the steps and order of ideas generation process. So, the object of analysis is a process of new service creation in medical organizations.

2. Analysis of new medical service ideas generation process

The meaning of a service idea can be defined as a vague characterization of a new individual service that tells the need to be fulfilled or the problem to be solved with this service. A service idea can be totally new for the market or it can be new to its producer or to the focus group (Bivainis, Drejeris 2008). Medical services are considered service only under some specific conditions. In this case costumers can be considered as a patients or users of medical services, medical staff – as providers of a medical services (Berry *et al.* 2003). Medical services include not only medical treatment (diagnosis and therapy), but medical care, and amenities (food, lodging) also.

A service idea can also be a new formulation of an old service that is redesigned. In other words this means reconstruction, rearrangement, or substitution of the process that make up a service (Berry, Lampo 2000). But not every problem of the customers can be resolved by new service. It depends of organizations' possibilities and an amount of customers' needs (Lovelock, Gummesson 2004). The key characteristic considered to distinguish professional medical services from other services is that their provision requires specialist knowledge and skills developed through lengthy, formal higher education. This knowledge affords professionals the right to isolate problems and determine the means for their solution (Jaakkola, Halinen 2006).

The nature of the medical service idea can influences the development process. In the case when the number of stakeholders and users is high, 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 also. It is important in process providing of medical services, because of a large number of its users. Research has to be made to gather consumer data in order to provide background information and in some cases, to profile the target segment (Shekar 2007). The evolution of the New Public Management movement has increased pressure on state bureaucracies to become more responsive to patients as clients (Vigoda 2002). Without a doubt, this is an important advance in contemporary public administration, which finds itself struggling in an ultradynamic marketplace. The most ideas for public sector can emerge by collaboration between service customers and their providers. Opportunity identification & needs analysis has to be involved a thorough evaluation of the current service from a user perspective. This stage has to include both internal and external data gathering

and include a study of users' behaviors, needs, attitudes and service usage. Experts in the area have to consult them and introduce with scholarly march in the profile of the medical problem. An important point to note, that some medical ideas for services can be very large and complex; in which case, it is useful to analyze the data on both macro and micro levels. So, experts must have high qualification (Cohen 2003). The detailed investigation involved in-depth surveys of target users to determine the extent of medical service problems, to build a user profile, to gauge user perceptions, attitudes and usage and an evaluation of existing services. In this case medical ideas resources would be exceptional, because scholarly march of scientific institutions can be the most important information. It is necessary to be at one end of the scale the collection of information from the user and at the other end – active participation by the medical service staff. Then appropriate idea-generation techniques aided in the generation of service ideas. Business companies create new services for variety of reasons, but usually in attempt to increase profits (Datta *et al.* 2008).

3. Model of new service ideas generation process

Based on above presented arguments of primary analysis, the general model for generating new service ideas analytically is shown in Figure 1. It was found to fit in well with the service context and local procedures. As highlighted earlier, the involvement of users and medical service staff varies according to the stage of ideas generating. It starts with information gathering and moves quickly to ideas receiving. Users of medical services (patients) become part-of this process eventually at the new service ideas receiving stage. It is peculiarity of medical services also.

This model provides a visual guideline for managing the medical ideas generating process better. Proposed model can be used to guide the involvement of users and service staff in the process of service idea generating. It also highlights the iterative nature of ideas development, which is shown by the arrow looping back into the first component. The model has to be useful to inform users and service staff about their contributions and role in the process of service development and cooperation.

By and large, within the customer-asa-resource perspective, researchers have focused on customers as a source of new product ideas. It is appropriate solution for medical organizations, because of their especially close relationship with their services users.

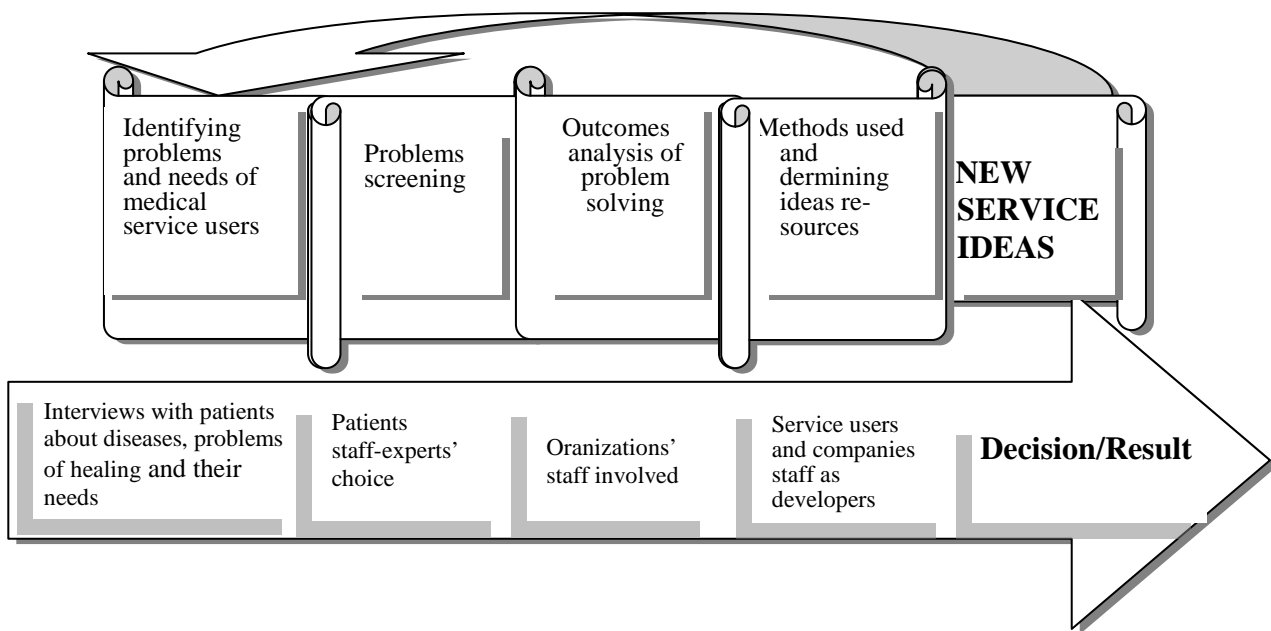


Fig.1. The model of new service ideas generation

Further will be reasoned the content, necessity and sequence of the suggested model components.

3.1. Identifying problems and customers needs

Historically, firms organized research and development internally and relied on outside contract research only for relatively simple functions or products underlying most such views are the assumption that customers are sources of information and that customer involvement can enhance product ideas effectiveness (Lundkvist and Yakhlef 2004 and others). However, researchers are not at one as to the relevance of involving customers in idea generation, arguing this will only lead to imitative, unimaginative solutions (Ulwick 2002). The role of customer (patient) in medical idea generation has mainly been recognized in connection with incremental, continuous innovation (Cradock-O’Leary *et al.* 2002). Although the processing of information, its reconfiguration through sorting, re-categorizing, recontextualising and combining it with internal information may lead to the generation of new ideas and knowledge, thereby uncovering explicit and latent customer needs and wants, the process is still be-devised in that it takes place at many removes from the customers’ tacit dimension, and is carried out in abstraction from their feelings and their emotion (Schuber, Ginsburg 2000).

The role of conversation, as a rich mode of interaction, has long been recognized by researchers and linguists. According to Tannen (1998), conversation is not a passive (cognitive) process

where a person actively speaks then remains passive while another speaks; rather it is always engaging and active. Involvement in a conversation is created as much through a listener’s participation as through that of the interlocutor. Both listener and interlocutor become involved in the work of making sense and sharing and creating ideas. It is through conversation that members are turned into a collective actor driven by the necessity to maintain the continuity of the social order. The most of cases users of medical services readily speak about their problems, especially about problems of organizing of service process. In the case of customer involvement in innovation-related activities, the text consists of the various suggestions, feedback and ideas during their conversation. This text is not to be interpreted as a mirror or representation of realities, but as a vehicle for bringing forth new ones. According Berry *et al.* (2003) it is in this sense that the text acts, it sanctions action, it intervenes in the organizational realities, it does things. What this implies is that customers and employees become an active participant in the patent care organization’s activities, a kind of hybrid actor composed of its customers, employees and, not least, the text that acts as a common history legitimizing the necessity to act. The role of conversation is double: First, it serves to make sense of the circumstances in which the interactants find themselves, and that is by translating those circumstances into available representations of how things are in the world; second, it serves to transform those interactants from two or several individuals into a collective purpose that “acts” on their behalf, becoming thus a sort of

quasi-actor (in a Latourian sense). It is only through this transformation into a collective actor that interactants become capable of dealing with the situation, as it has been interactively defined by them. This process of translation of circumstance into a frame of knowledge, and of interactants into a collective purpose is realized in language, both in the sharing of perceptions of the situation and in generating a collective response to the circumstances where the interactants are located (Lundkvist, Yakhlef 2004).

Consumers are often innovators, especially users of medical services (Greenhalgh *et al.* 2007). But some peculiarities are in using medicines. The most of cases patients can not be innovators, but only doers, users of particular medicines scheme (Crockett *et al.* 2011). Such circumstances allow identifying other kind of problems, which can be analyzed in the sequel.

Public and business organizations frequently draw on consumers' experiences, creative thoughts and usage behaviors for inspiration. The rationale for using consumers for creative solutions is that different individuals have different experiences, abilities, beliefs and needs (Shane and Venkataraman 2000, Webster *et al.* 2010). Such differences lead to unique interpretations of existing functional capabilities, possible product transformations to develop new solutions and novel conjectures for applications in new product areas (Zahra and Nielson 2002).

To gain insights from consumers, various combinations of data collection techniques are used. Consumers are brought into research laboratories, given trial service and their behaviors are observed or they are gathered together in focus group discussions and asked to respond with creative solutions to a particular problem or challenge given parameter constrained design choices (Crawford 1997). Recent virtual technologies have allowed consumer researchers to integrate different techniques to engage consumers in actually designing new products. Some companies use a web portal with a virtual adviser to "listen in" to desired combinations of customer needs; following this, customers are offered a design palette with specified features of service that fulfill their unique requirements (Webster *et al.* 2010).

The field of medical services is heterogeneous as it covers various profession sand activities. Each profession is based on its own discipline, which offers opportunities for interdisciplinary research.

3.2. Problems screening

According previous statements in order to be successful, a service should be based on customers need (Edvardsson 1997 and others). On more concrete level a service is a solution for a problem that customers have and which they will not or can solve themselves. The problem should be identified in order to find solution for it. An important point to note, that some problems of the customers can be very large and complex; in which case, and there's no question of creating some service to solve them by service companies' power. So, compnies' experts have to decide about companies possibilities and to choose only problems, which can be solved by companies' power and solved in qualitative way. Again according to Argouslidis and McLean (2001) problems and needs should be clarified in an early phase of the development process in order to make sure that service/market fit, the most important success factor for the new service, is ensured.

It has been stated that customers are not always actually aware of their need and problems, especially of future problems. In situation like this a service producer that has developed an offer based on certain needs can help the customer to define his needs and problems. A service producer should therefore possess profaund knowledge of the customer (Gustafsson *et al.* 1999). Patricio *et al.*(2011) even state, that customers future needs can be modeling by the service company and they proved that proposition in the article. In a sample of 108 pharmacies, it was found that 13% of the customer population asked medically related questions; pharmacists estimated that on average some 35% of their customers ask such questions.

These answers of these questions can be good resource for new ideas (Selya 1988).

According Jaakkola and Halinen (2006) foundation of medical services is the belief in the provider's benevolent intent, and in the notion that the service provider can be counted upon to advance the client's interests, rather than self-seeking interests such as profits or status, so a degree of altruism is associated with medical services. It means, that problems screening is not only difficult, but so important part of set processes in the road of the rise of a new ideas.

3.3. Outcomes analysis of problem solving

According to the definition, the medical service problems should also indicate for the critic the central outcomes of the service. Central outcomes can be defined as technical economic and process outcomes. Through technical outcome the experts

evaluate technical possibility to solve that problem by the employees of the service company. A single designer or even a team of them can not have knowledge on all aspects of attempts. It would not be feasible to acquire expertise in all required areas; therefore it is necessary to turn to other sources for knowledge and ideas. One of the peculiarities of medical service ideas is that in medicine need ideas not only for new healing methods, but creating new medical devices also. Results analysis can call new challenges and directions in biomaterials research also. These include synthetic replacements for biological tissues, designing materials for specific medical applications, and materials for new applications such as diagnostics and array technologies.

The process outcome tells how smooth and pleasant the problem has been from customers' point of view. The economic outcome and through it the economic quality reveals to the customer quality reveals whether he had received the economic benefits that he had expected. Appropriate economical outcome is actual for the service company also. Determining of economical outcome is important on the case, when company determine future problems and needs of the customers. According that analysis is possible to determine the market fit of a future new service. The description of process outcomes is very difficult because it would mean assessments of changing processes, actions and situations. So, it has to be made by qualified experts of the company. According Patricio *et al.* (2011) general model of multilevel service design customers experience influence of outcomes and appropriate results of such analysis influence of further service success.

3.4. Methods used for ideas generation and determination ideas resources

There are a number of approaches for generating, organizing, assessing, manipulating new ideas. Some of these approaches are described in Pahl and Beitz (1988) papers (systematic combination, combining with the help of mathematical methods) and Hyman (1998) works (morphological boxes and charts). The use of checklists is another one technique for creative thinking and manipulating appropriate ideas. Except mentioned below is presented some the most popular methods for new medical services ideas generation. The most of them fit for commercial services:

- Periodically screening existing medical services of organization and comparing them with the firms' products on purpose to improve attributes and combine the features/benefits of several separate products

into a single new service. The most of cases these methods apply for organizational changing of existing services in order to improve their performance.

- Examining users' un-met needs that are not being satisfied by competitive medical service. Conversations with patents can suggest ideas for new medical services in commercial and public organizations.
- Using idea-generation, such as brainstorming, to create a list of possibilities, and then evaluate each idea's feasibility and relevance to the organization's mission. This method is appropriate for generating ideas for new medical services in commercial and public organizations also.
- Improving product of other organizations' upon introduction could be the least expensive, fastest, and less risky way to introduce new medical (or service) to market. The group of such methods can be used in scientific organizations and commercial, public firms also.

Not all ideas of medical services can be directly adopted to form part of the design solution. Often only elements of ideas are used and these must be organized and combined to develop new, feasible ideas. Sometimes, ideas that at first do not appear to be workable, may in fact become practical solutions when modified or combined with other ideas.

New product development (PD) literature has gone to some length to emphasize the significance of new product idea generation and overall fuzzy front-end stages of NPD process (Brown and Eisenhardt 1995; Henard and Szymanski 2001). One of the focuses of this literature stresses the importance of various sources of new product ideas. There is a "technology push" theory that suggests that a new technology that works will sell itself, whereas the "market pull theory" proposes that only the voice of consumers can determine what the next best product will be. A review of the extant literature reveals a multitude of sources that can be categorized as being either internal or external to the firm. For example, research and development departments, venture teams, new product committees, and marketing department reports are considered useful internal sources of new product ideas, while consumers and lead users, distributors, suppliers, competitors, and government departments are considered useful external sources. The approach adopted by firms usually reflects their basic orientation toward NPD.

In addition to new medical service idea sources, the importance of interaction with relevant stakeholders across various stages of NPD

process is reflected in the growing body of interdisciplinary research on this topic. Ideas generation methods can not be differed as appropriate only for business or only for public medical organizations, because sources of ideas are similarly.

4. Conclusions

For becoming a successful developer of new product in commercial and also public organizations it appears that one must first become a successful developer of new ideas. Business, public institutions and especially medical organizations do not have any comprehensive model for new service idea generation, which would be developed on scientific foundations.

Proposed model consist of 4 functional components. All of them are proved and discussed with description interaction effects among components in the article. The first component destines identification problems and needs of service users, second dictate to screen determined problems, third orders to analyze outcomes of problem solving and fourth direct to choose method for ideas generating and determining their resources.

The model helps maintain a systematic approach, thus reducing the risk of failure and providing early information on service 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. Developed model for new medical service idea generation will allow superiorly predict this performance and to implement it in appropriate way, regularly and to get better results with less expenditure. Suggested model is appropriate in various conditions: for business and public medical organizations.

References

Alam, J. 2003. Commercial Innovations from Consulting Engineering Firms: An Empirical Exploration of a Novel Source of New Product Ideas, *The Journal of product innovation management* 20:300–313. <http://dx.doi.org/10.1111/1540-5885.00027>

Berry, L. L.; Lampo, S. K. 2000. Teaching an old service new tricks: the promise of service redesign, *Journal of Service Research* 2(3): 265-275. <http://dx.doi.org/10.1177/109467050023004>

Berry, L. L.; Seiders, K.; Wilder, S. 2003. Innovations in access to care: a patient-centered approach, *Annals of internal Medicine* 139(7): 568-574.

Bivainis, J.; Drejeris, R. 2008. New service idea screening, *Verslas: teorija ir praktika* [Business: Theory

and Practice] 9(1): 5-16. <http://dx.doi.org/10.3846/1648-0627.2008.9.5-16>

Brown, S. L; Eisenhardt, K. M. 1995. Product development: past research, present findings, and future directions, *Academy of Management Review* 20(2): 343–378.

Cohen, S. B. 2003. Design strategies and innovations in the medical expenditure panel survey, *Medical Care* 41(7): 5–12.

Cradock-O'Leary, J.; Young, A. S.; Yano, E. M.; Wang, M.; Lee, M. L. 2002. Use of general medical services by VA patients with psychiatric disorders, *Psychiatric Services* 53(7): 874–878, Jul. <http://dx.doi.org/10.1176/appi.ps.53.7.874>

Crockett, R. A.; Sutton, S.; Walter, F. M.; Clinch, M.; Marteau, T. M.; Benson, J. 2011. Impact on decisions to start or continue medicines of providing information to patients about possible benefits and/or harms: a systematic review and meta-analysis, *Medical Decision making* September/October 31(5): 767–777.

Datta, R.; Joshi, D.; Li, J.; Wang D. Z. 2008. Image retrieval: Ideas, influences, and trends of the new age, *Journal ACM Computing Surveys (CSUR)* 40(2):1378–1399. <http://dx.doi.org/10.1145/1348246.1348248>

Drejeris, R.; Tunčikienė, Ž. 2010. Complex assessment of the methods for new service idea generation / In 6th international scientific conference *Business and Management*. Selected papers. 2: 603–610. Vilnius: Technika. ISSN 2029-4441. <http://dx.doi.org/10.3846/bm.2010.080>

Greenhalgh, T.; Robert, G.; Bate, P., Macfarlane, F.; Kyriakidou, O. (Eds). 2007. *Adopters and Adoption in diffusion of innovations in health service organizations: a systematic literature review*, Oxford, UK: Blackwell Publishing Ltd. <http://dx.doi.org/10.1002/9780470987407.ch6>

Guarteen, D. 1999. Creating a knowledge sharing culture, *Knowledge Management Magazine*, February, 2(5): 3–5.

Gustafsson, A.; Ekdahl, F.; Edvardsson, B. 1999. Customer focused servicedevelopment in practice, *International Journal of Service Industry Management* 10(4): 344–358. <http://dx.doi.org/10.1108/09564239910282299>

Henard, D. H.; Szymanski, D. M. 2001. Why some new products are more successful than others, *Journal of Marketing Research* 38(3): 362–375 (August). <http://dx.doi.org/10.1509/jmkr.38.3.362.18861>

Hogg, G.; Laing, A.; Winkelman, D. 2003. The professional service encounter in the age of the internet: an exploratory study, *Journal of Services Marketing* 17(5): 476–94. <http://dx.doi.org/10.1108/08876040310486276>

Hyman, B. 1998. *Fundamentals of Engineering Design*, New Jersey, U.S.A.: Prentice-Hall. 620 p. ISBN 0-13-531385-6.

Jaakkola, E.; Halinen, A. 2006. Problem solving within professional services: evidence from the medical

- field, *International Journal of Service Industry Management* 17(5): 409–429.
<http://dx.doi.org/10.1108/09564230610689759>
- Lovelock, Ch.; Gummesson, E. 2004. Whither services marketing? In search of a new paradigm and fresh perspectives, *Journal of Service Research* 7(4): 20–41.
<http://dx.doi.org/10.1177/1094670504266131>
- Lundkvist, A.; Yakhlef, A. 2004. Customer involvement in new service development: a conversational approach, *Managing Service Quality* 14(2/3): 249–257.
<http://dx.doi.org/10.1108/09604520410528662>
- Mc Adam, A.; McClelland, J. 2002. Individual and team-based idea generation within innovation management: organizational and research agendas, *European Journal of Innovation Management* 5(2): 86–97.
<http://dx.doi.org/10.1108/14601060210428186>
- Pahl, G.; Beitz, W. 1988. Engineering design: a systematic approach, *The Design Council*, ISBN 0-85072-239-X. Inc. 82–85.
- Patricio, L.; Fisk, R. P.; Cunha, J. F.; Constantine, L. 2011. Multilevel service design: from customer value constellation to service experience blueprinting, *Journal of Service Research* March: 3–25.
- Schubert, P.; Ginsburg, M. 2000. Virtual communities of transaction: the role of personalisation in electronic commerce, *Electronic Markets* 10(1): 45–55.
<http://dx.doi.org/10.1080/10196780050033971>
- Selya, R. M. 1988. Pharmacies as alternative sources of medical care: The case of Cincinnati, *Social Science & Medicine* 26(4): 409–416.
[http://dx.doi.org/10.1016/0277-9536\(88\)90309-7](http://dx.doi.org/10.1016/0277-9536(88)90309-7)
- Shane, S.; Venkataraman, S. 2000. The promise of entrepreneurship as a field of research, *The Academy of Management Review* 25(1): 217–26.
- Shekar, A. 2007. An innovative model of service development: a process guide for service managers, *The Innovation Journal: The Public Sector Innovation Journal* 12(1): 2–20.
- Singh, B.; Karambir, A. 1996. Mechanical design principles: applications, techniques and guidelines for manufacture impact, Melbourne, Australia: Printing Pty. Ltd.
- Stamm, B. 2008. Managing innovation, design and creativity. Chichester: John Wiley and sons.
- Tannen, D. 1998. A talking voice that is so sweet: the poetic nature of conversation, *Social Research* 65(3): 631–651.
- Ulwick, A. W. 2002. Turn customer input into innovation, *Harvard Business Review* January: 91–97.
- Vigoda, E. 2002. From responsiveness to collaboration: governance, citizens, and the next generation of public administration, *Public Administration Review* 62(5): 527–540.
<http://dx.doi.org/10.1111/1540-6210.00235>
- Webster, C. M.; Seymour, R.; Daellenbach, K. 2010. “Behind Closed Doors”: opportunity identification through observational research, *Qualitative Market Research: An International Journal* 13(1): 24–35.
<http://dx.doi.org/10.1108/13522751011013954>
- Zahra, S. A.; Nielson, A. P. 2002. Sources of capabilities, integration and technology commercialization, *Strategic Management Journal* 23(5): 377–398.
<http://dx.doi.org/10.1002/smj.229>