

WRAGNET - THE APPLICATION OF DELPHI METHOD IN BUSINESS STRATEGY DESIGN

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ABSTRACT

This paper introduces an application of the Delphi method, WRAGNET, in the use of business strategy design. It describes the traditional Delphi Method and some contemporary modifications which also incorporate features from the Wisdom of Crowds, and gives an example of the use of WRAGNET in a business oriented research. The research described in this paper was conducted for 'Ensimetri', which is counselling organization for new and nascent entrepreneurs, located in Tampere, Finland.

Keywords: delphi-method, entrepreneurship, business counselling

1. Introduction

The wellbeing of any society depends highly on the birth of new, innovative enterprises as well as the viability of them. The economic downturn in the EU, and especially in Finland, has brought the operational preconditions of enterprises into the forefront of recent political discussion. The increased amount of layoffs has raised, for instance, the interest towards seniors as new entrepreneurs as a research topic. A recently published research concentrated on the individuals aged from 55 to 74 years having established a new business in Finland (Tervo, 2014). However, it is especially the young, who should be given adequate knowledge and skills in order to make entrepreneurship an attractive career alternative. It is of utmost importance to be aware of their attitudes towards entrepreneurship as well as their needs and wants towards entrepreneurship education (Galloway, Kapasi and Whittam, 2015; Zhang, Wang and Owen, 2015).

Researching entrepreneurial intention, characteristics of entrepreneurs and factors advancing and hindering entrepreneurship have long been among the central themes of entrepreneurship research (Singer, Amorós and Moska, 2014). Entrepreneurship research has been dominated by the survey method. According to McDonald et al. (2015) over 50% of entrepreneurship research has been conducted using quantitative surveys and statistical analysis.

The entrepreneurship discipline has received much criticism of being too dependent on social constructions of 'the entrepreneur' (Anderson et al., 2009) and not focusing on understanding entrepreneurship and the societal preconditions of entrepreneurship. Qualitative methods would better provide the depth and richness required of studying any human condition or experience (Gartner and Birley, 2002) advancing knowledge on the development needs of enterprises and information needs of entrepreneurs.

The aim of this study is to introduce and evaluate a qualitative Delphi methodology and a business application 'WRAGNET', used in a research on the development needs of entrepreneurship counselling and education. Wragnet also incorporates elements from the Wisdom of Crowds (Surowiecki, 2005), which exploits the data obtained from large and diverse groups of people with different levels and areas of expertise.

Delphi method has, to the author's knowledge, rarely been used in the entrepreneurship discipline. Some examples can be found, however. Gartner and Birley used Delphi method in his study on defining the underlying meanings about entrepreneurship (Gartner, 1990), and Evans and Volery in researching the use of the Internet to provide business development services (Evans and Volery, 2001).

The research briefly described in this paper is an example of the use of WRAGNET in a future strategy development project of 'Ensimetri', an entrepreneurship counselling organization operating in Pirkanmaa area, which is the county region around Tampere, Finland. Pirkanmaa inhabits around 32.000 enterprises employing nearly 130.000 people. The unemployment rate is somewhat higher than in Finland in average (Statistics Finland, 2015).

2. Traditional Delphi

The Delphi Method was developed in the 50's in RAND Corporation by Olaf Helmer and Norman C. Dalkey to forecast the impact of technology on warfare (Helmer, 1968; 1983; Dalkey, 1969). Traditionally the technique aims at achieving consensus of opinions on a specific issue. Today Delphi method and its modifications are used to various other purposes, for instance generating ideas for product- and service innovation.

The core idea of Delphi is to involve a panel of experts who individually and anonymously reply to questions within their domain of expertise. Delphi method also employs multiple iterations – or rounds – designed to develop a consensus of opinion concerning the topic. Day and Bobeva (2005) divide the process into three distinctive phases: Exploration, Distillation and Utilization, which are further divided into smaller steps.

Exploratory phase

Exploratory phase consists of planning and selection of participants into the panel. Delphi planning includes the definition of the research problem, preparing the set of actual questions, determining the criteria for participant selection and deciding upon the administrative method of data collection. Delphi project is highly sensitive to design and administrative decisions like panel design and survey architecture (Cole et al, 2013).

Delphi problems are usually important questions where an unequivocal right answer cannot be found (Okoli and Pawlovski, 2004). It is also applied in situations where values, new views and ideas are needed for the basis of decision making (Linturi, 2007).

In traditional Delphi researches the amount of participants has usually been small, from ten to twenty (Okoli and Pawlovski, 2004), but also significantly bigger panels have been used. A clearly quantitative orientation can be seen in several German and Japanese studies in technology forecasting where the size of the panels can

be thousands of respondents. The objective of the research as well as the need for the diversity of expertise will determine the optimal size for the panel. (Linturi, 2004.)

The criteria for participant selection have been widely discussed in the literature and a generally accepted view is that the participants must be experts in the field of inquiry, motivated and able to express their opinions clearly (see e.g. Hsu and Stanford, 2007; Day and Bobeva, 2005; Okoli and Pawlovski, 2003). The level of expertise depends on the complexity and specificity of the topic. The more ambiguous or specific the topic the deeper is the needed expertise.

On the other hand, in consumer research, one could argue that every consumer is an expert of his / hers own life. Contemporary Delphi modifications emphasize the diversity of the panel even at the cost of the level of expertise.

Distillation phase

The distillation phase is the actual iteration of survey rounds. The amount of rounds is usually 2-3. Usually the first round consists of open ended questions to collect ideas or 'soliciting specific information about a content area from the Delphi subjects' (Custer, Scarcella and Stewart, 1999 cited by Hsu & Sanford, 2007).

After the first round the researcher(s) analyze the obtained data and convert it into a structured questionnaire for evaluation on the second round. The panelists are asked, for instance, to rank-order the items by importance or interest. They are also asked to reason their rankings. As a result from the second round an initial view of the consensus with areas of agreement and disagreement can be identified.

The Delphi process can be ended after the second round. The consequent Delphi rounds, however, give the participants a possibility to revise their judgments. On the third round the participants are shown the items in question with the rankings to see if they would like to change their opinion to form a better consensus.

Utilization phase

Utilization phase consists of the analysis and use of Delphi study results. According to Day and Bobeva (2005) this stage has usually not been included in Delphi processes as an individual phase. But the efficient use of the results calls for tools to disseminate the new knowledge to the stakeholders of the study.

3. Contemporary Delphi based mixed methods

Online technologies have enhanced possibilities to use the Delphi method in many ways, for instance enabling bigger panel size and diversity, reducing administration cost and time investments, offering innovative data management and analysis tools and numerous other benefits (Cole et al., 2013 citing Donohoe and Needham, 2009).

As an example, the original developer of Delphi method, the RAND Corporation, is moving towards a new research system called 'ExpertLens'. This system is able to analyze opinions of big groups of panelists adapting online and social media technologies. RAND's expert lens incorporates elements of Delphi, but also The Nominal Group Technique and crowdsourcing (New Rand Research System Gathers, 2011; <http://www.edelphi.fi/en/>).

Recent Delphi projects focus more and more on channeling the 'Wisdom of Crowds' of large and diverse groups of people with different levels and areas of expertise (rand.org.) Most of the users of Delphi technique no longer strive for consensus but embrace a diversity of exceptional but reasoned viewpoints.

It seems that also the qualities of expertise are in transition. The expertise is becoming a quality of communities and networks instead of individuals (Linturi, 2007). The Wisdom of Crowds defined by James Surowiecki (2005) claims that "under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them". The required conditions for the crowd wisdom are: diversity, independence and particular kind of decentralization.

Since the beginning of 1990's a group of researchers and users of Delphi have formed a community, which could be called the 'Finnish Delphi School'. The pioneer is Dr. Osmo Kuusi, who in has developed 'The Argument Delphi'. Kuusi (2012) emphasizes, like Turoff (1975), a qualitative and argumentative Delphi process, where consensus is secondary to the diversity of reasoned opinions. eDelfoi is an online research program based on Delphi expert method. It is developed in co-operation with Future Research Center of Turku School of Economics by Osmo Kuusi with Jari Kaivo-Oja and Hannu Linturi (<http://www.edelphi.fi>).

Today also the analysis of opinions can be at least partially automatized to speed up the process. Especially in the business environment time is of essence. Online survey programs nowadays come with a tool for classifying and categorizing open answers. These tools can be used to conduct a preliminary analysis from a bigger amount of responses than what an individual researcher manually could do in a decent time. Traditional communication research tools may be employed in the online environment as well (Kavoura, 2014).

4. Wragnet

WRAGNET is a research method developed by Shop'In Research Ltd., a Finnish research company. The name refers to a web-based dragnet aimed at fishing the best new ideas which will lead the organization to the Blue Oceans. WRAGNET is based on Delphi method and also incorporates elements from the Wisdom of Crowds.

WRAGNET was first introduced in 2006 in a zoning development project of Lempäälä city center, a neighboring municipality of Tampere. One of the aims was to involve the citizens of Lempäälä in the planning process by asking their wishes and aspirations on how the city center should look like in the future. Since then WRAGNET has been used in several strategic zoning development projects, industrial and commercial strategy development projects and in retail business to find future development needs of a hardware store chain.

WRAGNET uses two iterations. The first round aims at collecting the opinions and ideas of the panelists and the second is used for ranking the chosen ideas by importance.

The panels usually consist of both experts and users of the service in question. For instance in a development project for a city center the panelists could be municipal officials and -politicians but also entrepreneurs and private citizens living in the area.

The amount of respondents is quite big: invitations to the first round are usually sent to several hundreds of individuals. The response rates are not as high as in traditional Delphi because the panelists are not all 'hand-picked'. However, they are informed in advance about the purpose of the study as well as the process and about the importance of participation.

A significant reason for the big sample size is the aim to ensure the variety of ideas as well as different opinions of different stakeholders. For the commissioner of the research it is often more important to find out about the differences in opinions than to achieve consensus.

WRAGNET is administered by an Internet-based survey program which allows the respondents to answer whenever suitable to them. It also guarantees total anonymity and thus prevents the bandwagon effect. The first round usually has 5 to 10 open questions.

The obtained data is initially analyzed using the survey program tool. After this phase the researchers continue the analysis by manually categorizing the answers into meaningful categories. The results are presented to the customer and the items for the second round are chosen in co-operation with the customer. Sometimes also new ideas that come up in these meetings can be included to the second round for evaluation.

The second round is quantitative; the respondents rank the items using a Likert-type scale, which is presented to them visually with a 'slider' with no exact scaled values. The results are presented in a rank order from most important to least important.

5. Wragnet project Ensimetri

The commissioner of the WRAGNET research was a non-profit organization 'Ensimetri' which offers counseling mainly to start-up and nascent entrepreneurs in Pirkanmaa area, Finland.

Their services include for instance start-up counselling, coaching and education and business services for immigrants. Ensimetri customer satisfaction rates have been very high, in 2013 the overall score for consultation was 9,0 on a scale from 4 to 10 (<http://www.ensimetri.fi>).

The need for the research came up in the spring 2013. Ensimetri was founded 1993 thus celebrating its 25th operational year. Despite the good operational results a need for strategy revision or a totally new strategy was recognized. WRAGNET was initiated to facilitate the idea generation for the strategy development. The main research question was: What should the counselling services for startup entrepreneurs be like for the next 25 years from now? Should the counselling for instance move from the offices to the social media networks?

Initially three separate expert panels were established. These panels consisted of the stakeholders of Ensimetri: the personnel, the network of voluntary professional advisors and the customers. Later a fourth panel of university students was added to gain insight on their attitudes on entrepreneurship as well as their vision on the development needs of entrepreneurship education in universities.

Altogether 2.600 entrepreneurs who had had counselling from Ensimetri were invited to the first round. Also all members of the counselling network (280) as well as all employees (18) were invited. The students' invitation to the research was done via contact persons in the three universities in Tampere which have around 35 000 students altogether. The contact persons sent the invitations to the students, however, not all of them. Responses were obtained from 257 university students altogether.

The research consisted of two rounds. First round aimed at evaluating the current services of Ensimetri and generating new ideas for the future counselling services and entrepreneurship education. The results of the first round were analyzed and categorized using content analysis. The protocol of the content analysis determines

the specification of categories focusing on the denotative, the one that can be seen and counted (Katsoni and Kavoura, 2013: 444).

The most often mentioned and most interesting, but not obvious or impossible suggestions were chosen for the second round for the participant evaluation. The evaluation was made by ranking by importance on a scale from 1(not at all important) to 5 (extremely important). Thus a ranking order of the most crucial development areas in the entrepreneurship counselling and education were obtained.

Evaluation

A mixed research method with features from Delphi, wisdom of crowds, crowdsourcing etc. is a useful tool in business development. By giving up the original aim to reach consensus widens the scope of use to various areas in strategy design as well as in product or service development, and also reduces the need for sophisticated statistical methods in assessing the consensus. Especially in business context this is a cost saving factor.

However, the use of large panels of hundreds of respondents provides vast amount of qualitative data which, in turn increases the amount of analysis work. The expertise, interest and ability to produce useful information of the respondents vary, which also sets special requirements to the analysis.

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