Leveraging Mobile Based Social Networks to Promote Culture of Innovation in Organizations

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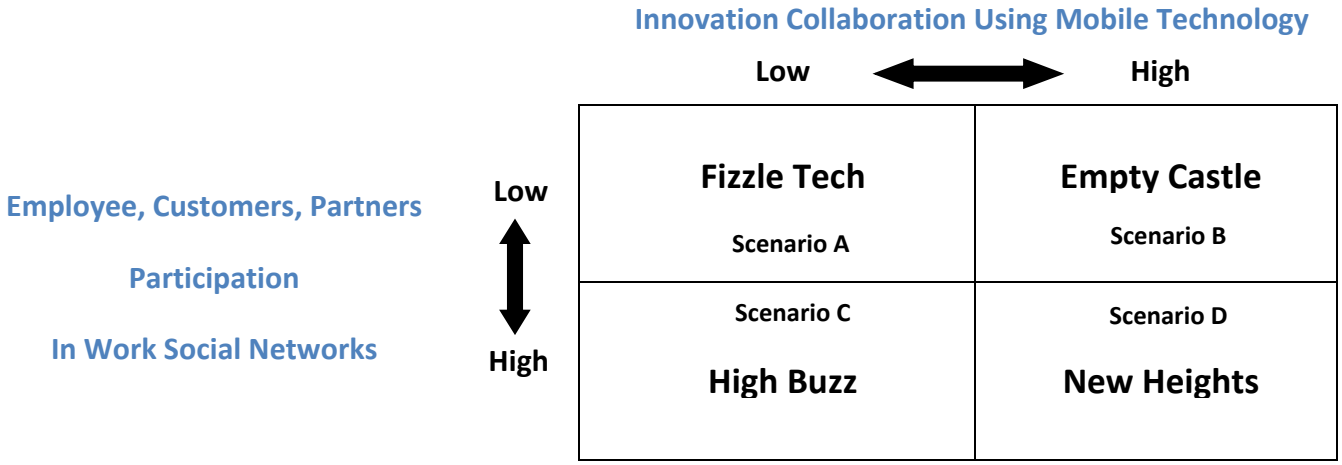
Contents

Executive Summary

The nature, speed and process of innovation are undergoing radical change in recent years due to radical technology innovations that have transformed how people communicate and collaborate. The two key innovations in recent years are mobile technology and social networking. The mobile technology in the form of mobile smart phones, mobile smart pads, smart wearable equipments etc. have transformed how humans interact with technology and with each other. On the other hand, social networking has transformed how people collaborate, communicate and create value. These two technology breakthroughs have major implications on how organizations manage and extend their innovation process.

This research paper analyzes the nature of innovation and how we can leverage mobile computing and social networking to create innovation value. It employs "Scenario Planning" as the core methodology. It defines the central issue, identifies key stakeholders, enumerates the main forces, outlines the important trends and subsequently identifies key uncertainties that have potential to impact its successful adoption. It uses the two most important uncertainties for scenario planning and detailed research.



The research method employs a two pronged approach. First, we scanned academic and industry literature to find evidence of critical trends that influence the key scenarios identified. Second, we conducted an online survey of industry executives to get their feedback on these key trends. The first approach helps us evaluate the scenarios based on knowledge gleaned from existing research literature, while the second approach helps us validate them with survey feedback received from industry executives.

We chose two groups of industry executives for survey with the expectation of receiving contrasting feedback. First group comprised WEMBA executives representing a cross section of

executives from different industries. Second group comprised technology executive who participate in the innovation process in some capacity in their organizations.

We studied academic and industry literature to learn the nature of innovation, the adoption/impact of mobile technology and the adoption/participation in social networks in organizational settings. We further studied the relevance of mobile technology and professional social networks for promoting a culture of innovation in organizations and analyzed them with respect to the scenarios identified.

The key findings from our study of academic and industry literature are outlined here.

1. Virtual communities for innovation, that support channels that guarantee accessibility, security and performance, promote collaboration with mutual appreciation that generates both incremental and radical innovations
2. A large number of firms use social networks at the front end of the innovation process to gather vision and requirement and plan to increase their investment in coming years to expand the reach of social networks through the entire innovation process
3. The ease of use, usefulness of content and personalization of information delivered on mobile devices drives user attitude which in turn influences performance
4. Mobile devices due to their form and easy access score high on several usability criteria such as effectiveness, satisfaction, attitude, learnability, accessibility and ease of use
5. The social capital in a firm in the form of strength of management ties, trust and solidarity can lead to product innovation & market penetration improving performance
6. Firms possess vast reservoir of tacit knowledge gained from years of experience and reflection that it can draw from employing right mechanism, such as open collaborative social networks, to generate radical innovation
7. Users with high user experience generate incremental ideas when they are aware of technology limitations and generate radical ideas when they are not aware of them
8. In innovation contexts, teams with very low or very high degree of co-operative orientation generate high degree of innovativeness. Companies should design innovation contests with the strategic objective in mind

Upon establishing a strong theoretical foundation for the use of mobile technology and social networking in the innovation management process, we conducted a survey with two key target groups: WEMBA executives and client executives in charge of technology innovation.

We created two separate 5 point Likert scale surveys on Qualtrics for the two target audiences. The two surveys had 25 questions each. The two surveys were identical in questions, but had separate URLs for tracking responses separately. All the questions were mandatory, which required the responders to answer all questions before submitting the survey. We sent the

survey URL to target audience by email. The survey generated some interesting insight in the four key areas.

1. Mobile Technology Adoption: The WEMBA executives showed ambivalent attitude towards the use of mobile technology, while client executives familiar with technology showed more willingness to try mobile applications and associated relatively more value with them. The respondents in general registered lower scores in these questions when asked about mobile technology in isolation without innovation management context. Interestingly they registered higher willingness to try mobile technology later in the context of innovation management.
2. Innovation Participation: The WEMBA executives noted high participation in the innovation process and expressed high interest in contributing ideas towards strategic goals of the organization, while at the same time noting that their organizations did not consistently employ innovation management processes or used innovation management software. The client executives showed similar interest in innovation participation, while at the same time noting some familiarity with innovation management processes and software.
3. Sharing Ideas Across Supply Chain: Both WEMBA executives and client executives showed great interest in exchanging ideas with their employees, customers, suppliers and partners. While noting that the innovation management software they used, if any, did not support such integration with supply chain participants, they showed great interest in such functionality in innovation management software.
4. Innovation Management Using Mobile Devices Across Supply Chain: Both WEMBA executives and client executives showed great interest in exchanging ideas in real-time with others through mobile phone and in connecting with their employees and supply chain participants to exchange ideas to create enterprise value.

Key take-away from the research is that effective use of mobile technology and social networking connecting employees with participants in their supply chain will add great value to innovation management software. Considering that innovation management software available in the market do not seem to have made a lot of headway into the industry, there exists a great opportunity to create an innovation management software focused on mobile delivery and integration with supply chain participants through professional social networks for effective innovation management.

Introduction

The Innovation Challenge

Innovation is the cornerstone for long-term success of organizations. As research literature suggests, larger well-established organizations often struggle in the innovation game, while smaller new entrants often excel in this (Rothwell, 1994). This is partly because well-established organizations over time develop organization structure and organization culture well designed to pursue current market commitments. The same organization structure and culture are not well suited for pursuing innovations for future opportunities. In their quest for developing an ambidextrous organization capable of pursuing opportunities for the present and innovations for the future, organizations often employ a top-down approach to innovation with associated processes and structures. Such an approach generates limited success as employees are not sufficiently motivated or engaged, do not relate with them at an emotional level or subscribe to them as a social group. Some organizations employ a bottom up approach but encounter challenges in integrating innovation dialogs across the organization.

Leveraging Mobile Based Social Networks for Innovation Management

Mobile based social networks offer capabilities that have opportunity to transform the existing approach to innovation management by combining the power of mobile technology and social networks.

Mobile Technology: It comprises all mobile devices in use including mobile phones, mobile touch pads and wearable mobile devices such as smart watches. It makes the power of computing technology available in a mobile fashion as opposed to traditional desktops.

Social Networks: Social networks allow users to connect with each other to form social groups and communicate with each other using private or broadcast messages. Facebook is a prominent social network in general setting and Yammer is a prominent social network in corporate setting. Organizations can form their innovation social network to connect employees with customers, suppliers and partners to promote a broader innovation dialog.

Some key capabilities of significance of Mobile Based Social Networks are outlined below.

1. **Fingertip Proximity**: It delivers computing power at the finger tip drastically reducing the time it takes users to think up ideas and communicate them with broader group.
2. **Real-Time Interaction**: It enables real-time interaction accelerating the rate at which information is shared, analyzed and acted upon.
3. **Ubiquity**: The ubiquitous presence of mobile technology in terms of smart phones and smart pads make these capabilities widely available.
4. **Personal Appeal**: Users perceive the mobile devices as personal devices which serve as their own window to the world. This increases personal appeal of information delivered by such devices.
5. **Self Organized Social Groups**: Mobile technology is serving as a key catalyst in promoting social computing. Traditionally employees in an organization function as individuals operating within the broader structure of the organization. Mobile technology promotes creation of self organized social groups that brings employees together with shared interests and goals.

Research Questions

Key Questions: The objective of the research initiative is to explore the commercial potential for a mobile based social network platform to promote a culture of innovation in organizations. The research will aim to address the following key questions.

1. Is mobile technology likely to provide projected employee engagement in the innovation process?
2. Is it possible to design innovation management software on mobile platforms to effectively support innovation collaboration across participants?
3. Will employees, suppliers, partners and customers be willing to join such mobile based social networks and participate in the innovation process?
4. Is it valuable for management to monitor the dialogs in the mobile based social networks and derive meaningful insights to drive innovation?
5. Will it be possible for management to steer the dialogs in the mobile based social networks to realize specific organizational objectives?

Nature of Innovation: There are several innovation management products available in the market, which promote innovation in a structured manner with supporting organization structure and governance frameworks. The proposed innovation aims to leverage mobile technology, social networking to promote innovation in organizations. The innovation is radical in its approach but not disruptive in nature. The key technology ingredients are mature enough for such application.

Market Potential: The innovation is more relevant to high-tech industries that operate on the edge and see a constant onslaught of new products and services. The innovation is still relevant for other traditional industries such as biotech or manufacturing, but these industries will not benefit as much from the fast paced information exchanged supported by the innovation.

Framework

Scenario Planning:

Scenario planning is useful in researching such fast moving sector such as innovation management. We intend to execute the following steps in scenario planning.

Step 1: Define the Issue

Organizations employ different methods, tools and techniques to promote a culture of innovation. An effective culture of innovation requires enthusiastic participation and constant collaboration among employees, customers, suppliers and partners. Mobile based social networks have potential to bring together all the players in real-time and unleash unbridled ideation and value creation.

Step 2: Define the Stakeholders

1. Employees: Employees are the foot soldiers in the innovation battle. They come up with innovative ideas, translate them into products and services and market them to potential customers.
2. Customers: Products and services are meant to serve the needs of the customers and deliver specific business benefits. It is important that customers participate throughout the innovation process from ideation to realization to commercialization. Their constant contribution to the innovation process is vital for building compelling products and services aligned with customer needs.
3. Suppliers: Suppliers provide the critical ingredients for building successful products and services. They are a source of innovation, differentiation and aggregation.
4. Partners: Partners contribute niche capabilities to realize complete customer value. Their participation often triggers innovative ideas that may not originate within the firm.
5. Management**:** Management of an organization serves as the captain of the innovation journey. The leaders within an organization evaluate internal innovations, competitor

innovations and broader innovation across the supply chain and market needs to define the strategy for products and services that the firm invests in.

6. Innovation Management Product Firms: Innovation management product firms provide best of breed products leveraging different computing models. They provide tools and techniques for managing the innovation process.

Step 3: Identify and Study Main Forces

F1. Technological Advances: A host of new technologies such as internet, mobility, nano-technology, genetics etc. have fundamentally changed the nature, scope and pace of innovation.

F2. Hyper Competitive Marketplace: The market place of products and services are more competitive than ever before. Innovations in all areas of business are essential to remain competitive and relevant in such a market place.

F3. Social Networking: With the advent of social networks customers are more closely connected with each other. This on one side provides an opportunity for an organization to reach out to customers and while on the other hand it presents a challenge to leverage this access to create sustainable value for the organization.

F4. New Marketing Channels: There is a huge explosion of marketing channels for organizations to reach their customers. The traditional print and media channels have been challenged with online social networks, blog sites and video sharing platforms.

Step 4: Identify Trends

T1. Mobile technology has broadened the reach of computing technology: Mobile technology in the form of mobile phones, mobile touch pads and other mobile gadgets, has made computing technology available anywhere anytime.

T2. Mobile technology has resulted in personalized computing: Mobile technology has resulted in devices that users identify with and associate with personally resulting in higher levels of engagement in computing interactions.

T3. Social networks bring people together: The various social networks have brought people together. There is a growing trend for people to participate in various social networks and exchange news, ideas and pictures.

T4. People have started communicating differently: People have graduated from traditional in person communication or phone communications to communications via social networks, micro blogs, media blogs, video chats etc.

T5. Instant communication is gaining wider acceptance: Traditional lag in communications is being replaced with instant communications through mobile technology. There is a broader acceptance and even wider expectations for bilateral or multi-lateral instant communications.

T6. Technology markets have witnessed rapid product innovation and obsolescence. Innovations in the technology market are rapid, ruthless and radical forcing companies to respond to threat of innovations from competitors with their own innovations.

T7. It is becoming increasingly important for organizations to learn from the periphery: There is usually a flux of activity and change in the periphery. It is important to engage participants in the periphery to learn about trends that can shape the future.

T8. It is becoming vital to engage customers, partners and suppliers in a close dialog: In a fast changing market place it is becoming more vital for organizations to engage customers, suppliers and partners to earn their trust while at the same time learn their changing preferences.

Step 5: Identify Key Uncertainties

U1: Users may not find mobile technology suitable for innovation collaboration: Even though mobile technology is omnipresent, the small real-estate poses challenge for effective collaboration. This may make users less enthusiastic to participate in the innovation process using mobile technology.

U2. Employees, customers, partners may not be enthusiastic to participate in social networks: Even though public social networks such as Facebook and Twitter have found broader

acceptance, social networks within an organization or within its extended supply chain may not find similar wider acceptance.

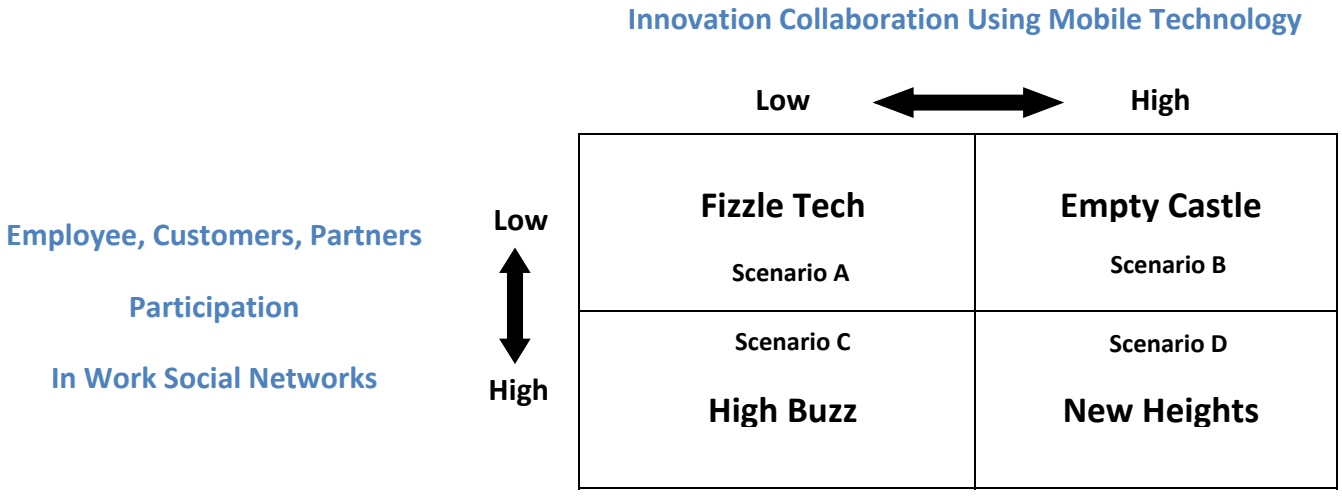
U3. Regulatory guidelines may impose restrictions on free sharing of information across the organizations: Regulatory guidelines may prevent certain firms such as financial services firms from sharing information freely across the organization. This may not be a big issue with technology firms or other organizations not bound by regulatory guidelines.

U4. It may prove difficult to have structured conversations on innovation in mobile social networks: Mobile social networks may promote multi-lateral dialogs across key stakeholders, but these may be very unstructured and disjointed making it difficult to derive meaningful nuggets of wisdom for innovation.

U5. The use of mobile technology and social networks may be additional but less used features of existing innovation management software products instead of being radical. Existing innovation management products already offer or are in the process of offering mobile and social features. These may be marketed as enabling capabilities rather than radical capabilities with potential to change the nature of dialog.

Step 6: Select the two most important key uncertainties

The first two uncertainties U1 and U2 are key uncertainties that have the largest impact on being able to use mobile social networks as disruptive medium to promote a culture of innovation.



Scenario Blueprint

	Scenario A Fizzle Tech	**Scenario B Empty Castle**	**Scenario C High Buzz**	**Scenario D New Heights**
Mobile Collaboration	L	H	L	H
Stakeholder Participation	L	L	H	H
Information Sharing	L	M	M	H
Structured Conversation	L	H	L	H
Radical Shift	L	M	M	H

Step 7: Assess internal consistency and plausibility of initial learning scenarios

Scenario A (Fizzle Tech): It may turn out that the real-estate challenges with mobile platforms make them unsuitable to have a meaningful innovation dialog and collaboration. In addition it may be possible that employees, customers and partners are reluctant to participate in a social network and brainstorm ideas. Such a scenario makes information sharing less plausible and structure conversation less amenable in turn negating the possibility of a radical shift. Software product vendors may add mobile features and social networking features to their existing innovation management software platforms, but these are not likely to be widely used. In such scenario, mobile technology or social networking does not leave a significant impact on the culture of innovation in organizations.

Scenario B (Empty Castle): It may be possible to create well designed mobile based platforms that support innovation collaboration. But the employees, customers and partners do not participate enthusiastically in the platform limiting the value it can generate. The platform may support information sharing and structured conversations, but the low participation from key stakeholders will limit the innovation value it can produce.

Scenario C (High Buzz): It may turn out that the real-estate challenges with mobile platforms make them unsuitable to have a meaningful innovation dialog and collaboration. But not

withstanding the challenges in the platform, it may be possible that employees, customers and partners participate in the innovation process enthusiastically. This may not support structured conversation or information sharing, but buzz generated in the platform will inspire further investment which will eventually lead to Scenario D. So scenario C, if it transpires, will be a transition phase that leads to a more stable Scenario D.

Scenario D (New Heights): It may be possible to create well designed mobile based platforms that support innovation collaboration. It may also be possible that employees, customers and partners participate in the innovation process enthusiastically. The strong combination of both capabilities will promote information sharing, structured conversations and result in a radical shift in the culture of innovation. This has potential to integrate the different departments in the organization with different external stakeholders to promote a coherent culture of innovation which will gain strength and momentum over time to redefine the organization.

Methods

The research method employs a two pronged approach. First, we scanned academic and industry literature to find evidence of critical trends that influence the key scenarios identified. Second, we conducted an online survey of industry executives to get their feedback on these key trends. The first approach helps us evaluate the scenarios based on knowledge gleaned from existing research literature, while the second approach helps us validate them with survey feedback received from industry executives.

Study and Analysis of Academic and Industry Literature: Research industry journals to see the impact mobile technology and social computing technologies had on different industries. The key research questions to explore are as follows.

1. Has mobile technology been able to promote better employee engagement in firms?
2. Has enterprise social network been successful in attracting active participation by employees, customers and suppliers?
3. Does mobile technology limit flexibilities in designing applications on them?

Survey Executives: We surveyed executives at client organizations to get their feedback on the key research questions. We chose two groups of representative client organizations.

A) WEMBA Executives representing a cross section of organizations: This group represents a very diverse population of executives from different sectors and different roles. Their response represents collective perspective of general management if we do not segment our audience based on their background, roles and responsibilities.

B) Executives at client organizations dealing with technology innovations: This group represents a population of executives who are involved in technology innovation and development. Their response represents collective perspective of target market segment of technology management professionals.

Such two pronged survey will help us understand the relevance of market segmentation for marketing such innovation management software leveraging mobile social networks.

The surveys aimed to get answers to the questions mentioned below, under the following four categories, using a five-point Likert scale. The survey had 25 questions, first two questions being name and organization to establish that unique visitors had answered the questions. All the questions were mandatory that required the responders to answer all the questions before submitting the survey. We created the survey on Qualtrics at http://wharton.qualtrics.com/. We created two separate surveys with identical set of questions for the two target audiences so that we could track their responses separately.

WEMBA URL: http://survey.az1.qualtrics.com/SE/?SID=SV_6KESe8eXLs3CMrH

Bikash Behera <bikashkbehera@gmail.com> Mar 3 (9 days ago)

to mbaexeceast38-.

Dear Friends,

Hope you are having a wonderful last semster. Need a huge favor from you.

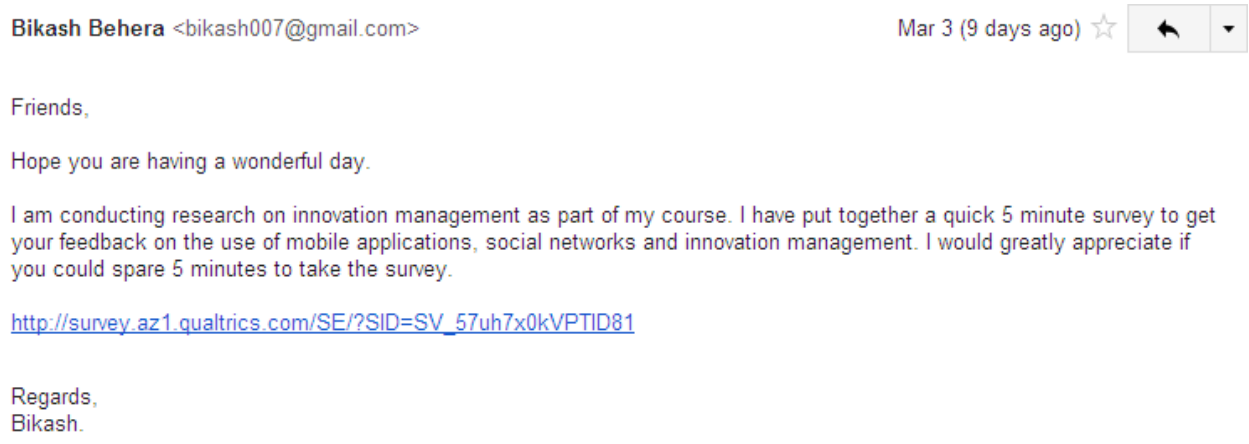
As part of MACK research fellowship I am conducting research on the topic "Leveraging Mobile Based Social Networks to Promote a Culture of Innovation in Organizations". I have compiled a small survey below to get your feedback on mobile applications, social networks and innovation management. It should take you roughly 5 minutes to complete the survey. I would sincerely appreciate if you could spare 5 minutes of your valuable time to support my research effort and I promise to buy you a drink!

http://survey.az1.qualtrics.com/SE/?SID=SV_6KESe8eXLs3CMrH

My sincere thanks to you in advance.

Regards,
Bikash.

Client URL: http://survey.az1.qualtrics.com/SE/?SID=SV_57uh7x0kVPTlD81



Bikash Behera <bikash007@gmail.com> Mar 3 (9 days ago)

Friends,

Hope you are having a wonderful day.

I am conducting research on innovation management as part of my course. I have put together a quick 5 minute survey to get your feedback on the use of mobile applications, social networks and innovation management. I would greatly appreciate if you could spare 5 minutes to take the survey.

http://survey.az1.qualtrics.com/SE/?SID=SV_57uh7x0kVPTlD81

Regards,
Bikash.

Mobile Technology Adoption: These research questions explore if mobile platforms offer a more compelling platform for delivering new services to clients.

1. I **use apps** running on mobile devices (Smart Phones/PDAs) as part of my day to day business operations
2. I find it **easier** to use apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers
3. I am more **engaged** with apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers
4. The small **size** of mobile devices (Smart Phones/PDAs) does not impact my willingness to try apps running on them

Innovation Participation: These research questions explore if participants are involved in the innovation management process and if the organization employs mature processes and tools for innovation management.

5. I actively **participate** in the innovation process in my organization
6. I would like to contribute new ideas to the organization in areas that management communicates to me as **strategic**
7. My organization employs a well defined **innovation process**
8. My organization uses **innovation management software** to manage the innovation process

Idea Sharing Across Supply Chain: These research questions explore if participants are interested in learning new ideas from across the supply chain and also if they are willing to contribute new ideas across the supply chain.

9. I would like to hear new ideas from our **customers**
10. I would like to hear new ideas from our **suppliers**
11. I would like to hear new ideas from our **partners**
12. I would like to contribute new ideas to **companies** whose products and services I use

13. I would like to contribute new ideas to our **clients** that use our products and services
14. I would like to contribute new ideas to **partners** that we work with
15. It is important to me for me to **exchange ideas** with my employees, customers and suppliers
16. I would like to learn the **summary of new ideas** coming from my extended supply chain

Innovation Management Using Mobile Devices Across Supply Chain: These research questions explore if participants are interested in participating in innovation management through mobile devices to connect with extended supply chain.

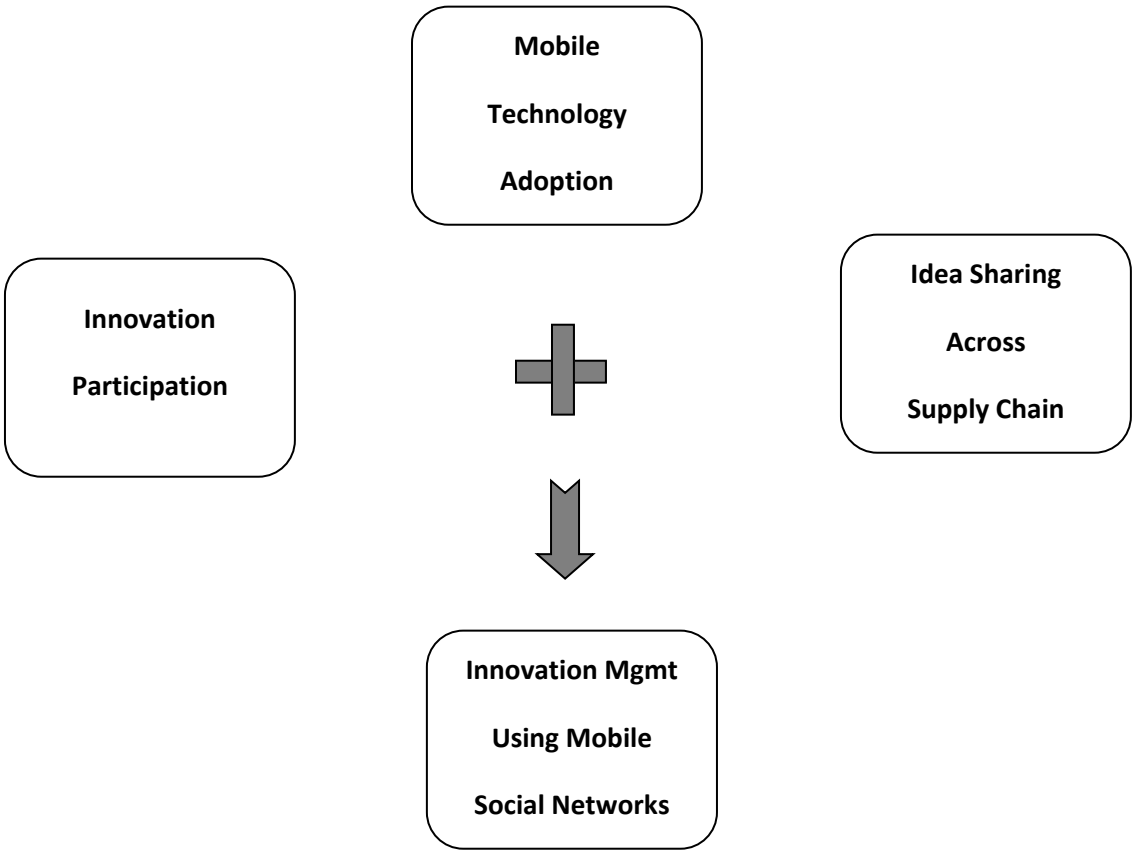
17. I would like to **post my ideas** through my mobile phone
18. I would like to **read about other's ideas** through my mobile phone
19. It is important for me to **exchange ideas** with others in real time irrespective of their location
20. The innovation management software we use is available on **mobile** devices
21. I would like to see the innovation management software available on my **mobile** devices
22. The innovation management software we use connects us with our **extended supply chain**
23. I would like to see the innovation management software connect me with our **extended supply chain**

A copy of the survey is attached.


Adobe Acrobat Document

Survey Integration

The survey covering the different aspects will help us gauge the relevance and utility of delivering innovation management software through mobile devices that connects an organization with its extended supply chain.



Relevance of Mobile Social Networks in Innovation Management

Mobile technology has the potential to short circuit the communication channels to accelerate the innovation process in an organization increasing its chances of success manifold.

Widening Peripheral Vision: The weak signals of innovation and disruption usually come from the periphery, where new competitors are making inroads, unfamiliar customers are participating in early applications and unfamiliar technology paradigms are emerging. Companies can study the lead users who are ahead of the curve to see the promise of a new technology. A mobile based social network connecting employees with customers, partners and suppliers will provide the medium for exchange of information across all these participants which in turn will widen the organization's peripheral vision.

Creating a Learning Culture: Individual learning translates into collective learning through a culture that promotes information sharing and frequent communication. The information from the periphery must be absorbed, communicated widely and intensively discussed so that the full implications are understood. Such learning culture is characterized by a diversity of viewpoint, willingness to challenge deep-seated assumptions of entrenched mental models and continuous experimentation that promote deep dialog and strategic conversation. A mobile based social network connecting employees across the organization provides the communication backbone to promote such an active learning culture in an organization. It will promote bottom-up participation from employees at different levels that are typically closer to the market and technology. The ongoing dialog will allow employees to challenge the prevailing mindset, surface key uncertainties and analyze underlying assumptions.

Staying Flexible with Real Options: The management may monitor the peripheral dialog to find patterns of opportunity, validate them further to evaluate their potential and pursue them in a phased manner leveraging the real options. It can use the mobile based social network to communicate its ideas for commissioning option based exploration and share the results to pursue further research and innovation.

Providing Organization Autonomy: The mobile based social network may bring together employees from different functions together allied behind a common vision and goal. The self-selected group of individuals is likely to display stronger commitment to the pursuit of the goal than a group that management puts together to pursue an organizational goal. The increased personal commitment that a self-selected social group cultivates is critical to succeeding in the turbulent environment of innovation. The organization can observe formation of such cross functional teams capable of pursuing a vision to its physical realization. Where necessary the management can provide guidance and support to steer the group closer to pertinent goals in line with broader organization strategy.

Supporting Technology Speciation

Mobile based social networks connect employees from different parts of the organization with suppliers, partners and customers providing the right platform to promote technology speciation. The participants operating in different intersections of markets and applications can visualize different market contexts for the products and services that the organization provides. Diversity of feedback received from heterogeneous market participants address different facets of the market. Unconstrained selection criteria that broader market supports coupled with feedback from lead users will help the organization glean critical market insights that will shape new species of products and solution. Feedback received from different segments of the market can lead to convergence of different technologies and applications to result in the next generation of killer applications. Management can monitor the dialog on these mobile based social networks to provide necessary support and guidance to accelerate the evolution.

Identification and Assessment of Emerging Technology

As the mobile based social network support meaningful deep dialog between the employees of the organization and the market participants, it gives the management the unique vantage point to tune into the conversation and glean nuggets of opportunities that it can benefit from. The management can set the strategic direction by scoping the dialog in line with firm capabilities, search for insights from key market participants, evaluate opportunities that evolve

against firm capabilities and commit to pursuing opportunities that it sees strong potential in. It can choose to watch and wait, or position and learn, or sense and follow or believe and lead.

Leveraging Mobile Based Social Platform to Achieve Organization Strategy

The greatest benefit that an organization can reap from mobile based social platforms is by using it as a tool for executing organization strategy. Management can define issues it aims to understand better in terms of time frame, scope and decision variables and engage the right internal and external stakeholders in the dialog. Management can organize challenges, competitions and tournaments with specific goals in mind to direct the dialogs. The management provides the discipline, while the participants contribute imagination culminating in disciplined imagination. The management can strike a balance between the intuitive approach espoused by the participants and the statistically rigorous approach typically favored by the organization to pursue a balanced heuristic approach to innovation. Management can promote active participation by the employees and market participants by providing some form of reward for participating and achieving results.

Study and Analysis of Academic and Industry Literature

We researched many aspects of the innovation process, mobile technology and social networking and explored how they complement each other to create mobile based social networks to support innovations. The following table gives an overview of the research to analyze relevant aspects in detail followed by synthesis. The key objective of the research is to validate the two key uncertainties outlined in the previous section.

U1: Users may not find mobile technology suitable for innovation collaboration

U2. Employees, customers, partners may not be enthusiastic to participate in social networks:

Section	Topic	Summary
I	Virtual Communities for Innovation	Conceptual model that explains how virtual communities cultivate innovation
II	Social Media and Product Innovation	Captures how firms use social media to pursue innovation
III	Innovation via Social Media Examples	Gives some examples how companies have successfully used social media for innovation
IV	Mobile Service Attitude Framework	Captures aspects of mobile technology that influence user attitude and adoption
V	Mobile Usability Framework	Captures usability features that are critical for mobile device adoption
VI	Social Capital and Innovation	Explains how firms can use social capital to derive innovation value from resources
VII	Harnessing Tacit Knowledge to Achieve Breakthrough Innovation	Gives a framework to harness tacit knowledge for pursuit of innovations
VIII	Tuning User's Innovativeness During Ideation	Explains how a firm can leverage its users innovativeness during ideation process
IX	Community Based Innovation Contests	Explains how firms can leverage innovation contests to derive strategic value
X	Synthesis	Synthesizes the research findings and validated the key uncertainties.

I. Virtual Communities for Innovation

The mobile based social networks promote creation of virtual communities for innovation (Schroder, Holzle 2010). Such communities form as employees, customers, partners and suppliers collaborate on specific missions. Schroder and Holzle developed a comprehensive concept of the collaboration between companies and virtual community called "community-company interaction quality (CCIQ)". This integrative framework describes the nature of interaction and the consequent innovation that it generates.

It proposes that participants driven by social sentiments undertake activities through various channels that improve communication, reciprocity, recognition and cohesion ultimately impacting quality and quantity of innovation.

We can use this framework for evaluating how the participants in a mobile based social network collaborate using various channels, the activities they perform, the sentiments that drive them, the core interaction and the consequent impact.

Channel: Channel is the basic technology platform, such as web sites, discussion boards or mobile applications that support collaboration. Traditionally internet portals were standard channels. But with advent of mobile technology participants find it more convenient to interact through mobile applications rather than interacting with the internet portal through a traditional desktop or laptop computers.

Activities: The activities the participants perform are either directed by the needs of innovation or the need for governance. Governance is critical in steering the discussions to logical conclusions in line with the company vision.

Sentiment: The driving force for the participants either stems from a need for incremental changes to existing products or need for new products.

Interaction (CCIQ): The interaction forms the essence of the virtual communities. It involves frequent communication, mutual exchange of ideas and reciprocation, recognition by peers and the company, and cohesion among the participants. These interactions collectively create impact.

Impact: The impact of such virtual interactions can either lead to incremental or radical innovation. The exchange of ideas can generate different quantities and qualities of artifacts.

II. Social Media and Product Innovation

A recent white paper [Kenly, Poston] published by Kalypso outlines the benefits that organizations are reaping from leveraging social networks to drive product innovation. The study finds that two-third of respondents use social media in some form for product innovation.

Firms are leveraging social media at the front end of innovation to supplement the traditional innovation methods like focus groups and formal market research. There is a growing trend to leverage social media beyond front end of innovation to include post launch and support activities. Companies derived most benefits from leveraging social network at the front end of innovation from requirement gathering to product adoption.

Based on the success experienced so far in front end of innovation, firms plan to leverage social media for production innovation, product development and product management. This establishes social networks as a key engine for innovation. Firms need to explore ways to maximize their return on this media.

III. Innovation via Social Media Examples

Cisco's annual iPrize initiative invites external contributors from across the globe to go online to submit big bet business concepts that Cisco can develop further. In the 2010 competition, 2,900 people from 156 countries entered 824 innovations. Through a series of evaluations, ratings and review, 32 semi-finalists were selected, with 9 teams reaching the final phase. The ultimate result: Two separate potential billion-dollar business ideas were generated and funded by Cisco. The winning submissions received a $250,000 prize each—an extremely cost efficient investment considering the yield. Instead of having one team working on a single innovation effort, Cisco mobilized an army of people working on hundreds of projects. [Accenture]

Similarly, in 2001 P&G began moving from an 'invent it yourself' product development model to a 'Connect + Develop' open innovation approach—one that attracted thousands of innovation ideas and materialized many of those ideas in new products. For instance, it launched the battery-powered toothbrush, Crest Spinbrush, by working with external inventors; the anti-aging Olay® Regenerist brand of skincare products, by working with a supplier of cosmetic active ingredients to harness the pentapeptide technology; and it promoted Align—a well-known digestive wellness brand using Bifantis® probiotic—by working with University spin-offs. P&G successfully launched many well-known brands in collaboration with external companies,

expanding its range of products to service consumer demands in a more comprehensive manner. [Accenture]

The results of 'Connect + Develop' are worth noting. In 2001 less than 10 percent of P&G's new product innovation involved external collaboration. By 2005, it had increased to 50 percent. Following this robust performance, P&G has set a target for the 'Connect + Develop' program of US$3 billion by 2015 in annual sales growth, up from US$1 billion in 2010. Products launched with external business partners would, at current growth rates, comprise more than 60 percent of P&G's new annual sales growth, as compared with approximately 25 percent of its new annual sales growth in 2010. [Accenture]

The UK Department for Work and Pensions created a platform, "Idea Street," that allows its 120,000 staffers to contribute innovations through a gaming environment. In a matter of months, 1,000 ideas were harvested and 63 are under development. [Accenture]

Dell has its "Social Media and Community Teams," otherwise known as SMaC. Their goal: "embed social media into the fabric of the company and beyond." Although the communication platform is centralized, engagement is distributed across a constellation of stakeholders from blogs to wikis to networking groups. [Accenture]

IV. Mobile Service Attitude Framework

Technology Acceptance Model (TAM) framework [Davis, Bagozzi, and Warshaw, 1989] suggests that acceptance of a system is explained as a function of perceived usefulness (PU) and perceived ease of use (PEOU). There are several external variables that impact PU and PEOU. Together they impact pre-adoption and post-adoption attitude.

Further research [Basolgulu, Daim, Polat, 2013] has formulated a "Mobile Service Attitude Framework" that explains the factors that influence the customer attitude to mobile services.

The three key drivers "Usefulness", "Ease of Use" and "Personalization" drive "Attitude" which in turn drives "Satisfaction". Basic drivers such as "Information Completeness", "Adaptivity", "Lifemode", "Error Rate", "Flexibility", "User Control", "Customization" and "Innovativeness" influence "Usefulness" and "Ease of Use". The mobile devices with their immediate accessible form are very well-positioned to deliver these benefits and with careful design will be able to engage the users and influence their attitude to participate with innovation process more closely.

V. Mobile Usability Framework

Mobile devices present unique usability challenges due to small real-estate while at the same time offer great opportunities due to their "anytime, anywhere" availability. The study by [Coursaris, Kim] has created a framework to assess mobile usability features. The framework covers the key usability dimensions within relevant contexts.

The mobile devices as they are easily accessible and always available are better suited to deliver on key usability dimensions such as effectiveness, satisfaction, attitude, learnability, accessibility and ease of use. This verifies the key hypothesis whether mobile devices are better suited to deliver on key usability dimensions to inspire widespread adoption.

VI. Social Capital and Innovation

Social Capital, commonly understood as the goodwill available to individuals and groups in an organization context, is a key determinant of innovation. Research by Kemper, Schilke, Brettel has created a conceptual model to explain how social capital translates into organizational capabilities and superior performance by leveraging Resources of the organization.

The conceptual model outlines the following hypothesis.

- A positive relationship exists between social capital and marketing capability.
- A positive relationship exists between social capital and R&D capability.
- Technological turbulence moderates the positive relationship between social capital and marketing capability; the relationship strengthens as technological turbulence increases.
- Technological turbulence moderates the positive relationship between social capital and R&D capability; the relationship strengthens as technological turbulence increases.
- Competitive intensity moderates the positive relationship between social capital and marketing capability; the relationship strengthens as competitive intensity increases.
- Competitive intensity moderates the positive relationship between social capital and R&D capability; the relationship strengthens as competitive intensity increases.

As firms operate in an intense competitive landscape, it is important for an organization to leverage its social capital, a combination of strength of managerial tie, trust and solidarity to influence employee participation in innovation process to generate superior performance.

VII. Harnessing Tacit Knowledge to Achieve Breakthrough Innovation

Breakthrough innovations result from harnessing of tacit knowledge possessed by individuals and project teams. Tacit knowledge lies below the surface of conscious thought and is accumulated through a lifetime of experience, experimentation, perception and learning by doing [Mascitelli, Ronald, 2000]. The following diagram captures the conceptual model for the contribution of tacit knowledge to innovation.

Engendering a Deep Personal Commitment

An abiding personal commitment is essential for drawing upon tacit knowledge for creating breakthrough innovation. A manager can pursue this using approach outlined here [Mascitelli, Ronald, 2000].

Craft a ‘‘culture of innovation’’

- Build a collection of company ‘‘stories’’ that encourage innovators to aspire to greatness
- Send a message that great ideas have an excellent chance of becoming great products
- Establish a policy of management support for reasonable risk-taking & experimentation

Create a positive identity for project teams

- Encourage social identification with high-performance teams
- Give teams a clear message of their importance, uniqueness, and potential for success
- Instill a sense of wonder and adventure into the product development process

Build an environment for tacit knowledge sharing

- Allow sufficient ambiguity in the early stages of design to foster creative thinking
- Use metaphors and analogies to communicate the guiding strategic vision for a project
- Protect potential innovators from negative experiences when expressing their vision
- Cultivate an environment of respect, equality, tolerance, care, and encouragement

Prototypes as a Catalyst for Breakthrough Thinking

Formative prototypes can play an important role in the early development of discontinuous innovation. The following diagram captures the conceptual model for an interactive process of prototyping that can facilitate tacit knowledge sharing [Mascitelli, Ronald, 2000].

In this prototyping process it is important that innovators work together to create rough model and refine it over iterations to create alpha prototype by incorporating feedback received from lead users and alpha users.

Sharing Tacit Knowledge through Direct Interaction

For such innovative prototyping to prosper with deep personal commitment, it is important to have a channel that supports such open collaboration, with constant validation and feedback. It is enhanced by close personal contact, sharing common emotions and experiences, and coaxing forth and occasion insight.

VIII. Tuning User's Innovativeness During Ideation

New ideas very often take shape on the periphery where users interact with the products and the organization elements. A recent study [Kristensson, Magnusson] investigates whether the user's ideas become more incremental or more radical depending on the users' awareness of technological restrictions and their utilization of user experience. The study proved the following hypothesis through suitable experiments.

- Users who are unaware of the technical limitations of the underlying technology produce ideas that are more original than the ideas of users who are aware of the technical limitations of the underlying technology.
- Users who are aware of the technical limitations of the underlying technology produce ideas that are more feasible and easier to implement than the ideas produced by users who are unaware of the technical limitations of the underlying technology.
- Users with high use experience will produce ideas that are characterized by a higher level of user value than ideas from users with limited use experience.
- Users with a high use experience who are less aware of any technological restrictions (TAL UEH) are more likely to produce ideas that are radical in nature.
- Users with a high use experience who are more aware of technological restrictions (TAH UEH) are more likely to produce ideas that are incremental in nature.

As this study illustrates the innovativeness requires high use experience but at the same time low exposure to technology limitations to come up with radical ideas vs. incremental ideas. It is important to engage the users in the innovation process through mobile based social network to glean valuable innovation ideas.

IX. Community Based Innovation Contests

Innovation contests offer the possibilities of interaction and cooperation among participants. Cooperation in the competitive setting of innovation contests leads to innovativeness. Experiment findings suggest that a very high as well a very low degree of co-operative orientation result in a high degree of innovativeness, while a medium degree of cooperative orientation results in low degree of innovativeness [Bullinger, Neyer, Rass, Moeslein].

These findings have interesting implications for designing innovation contests via mobile based social networks. Depending on the strategic intentions, an organizer can design an innovation contest along three avenues. First, supporting participants with a very degree of cooperative orientation, the contest will result in highly innovative outputs and a community of participants will be established. Second, if the organizer is interested mainly in highly innovative submissions of single persons, the contest should be designed to support persons with a very high degree of competitive orientation. Third, if the organizer is interested in both highly innovative submissions and community building among the participants, then both very high low and very high cooperative orientation should be supported.

X. Synthesis

The research of academic literature and industry journals has helped us get a better understanding of the two key uncertainties that we wanted to validate.

U1: Users may not find mobile technology suitable for innovation collaboration

U2. Employees, customers, partners may not be enthusiastic to participate in social networks

Section	Topic	U1: Innovation Collaboration on Mobile Devices	U2: Participation by Employees, Customers and Partners
I	Virtual Communities for Innovation		Strengthen
II	Social Media and Product Innovation		Strengthen
III	Innovation via Social Media Examples		Strengthen
IV	Mobile Service Attitude Framework	Strengthen	
V	Mobile Usability Framework	Strengthen	
VI	Social Capital and Innovation		Strengthen
VII	Harnessing Tacit Knowledge to Achieve Breakthrough Innovation		Strengthen
VIII	Tuning User's Innovativeness During Ideation		Strengthen
IX	Community Based Innovation Contests		Strengthen

The academic research and industry research outlined here suggests that "Mobile Based Social Networks" have great potential to extend the innovation management process beyond the bounds of an organization and leverage the knowledge and insight from the employees, customers and partners. The use of mobile technology will improve the ease of use, rate of adoption and extent of success.

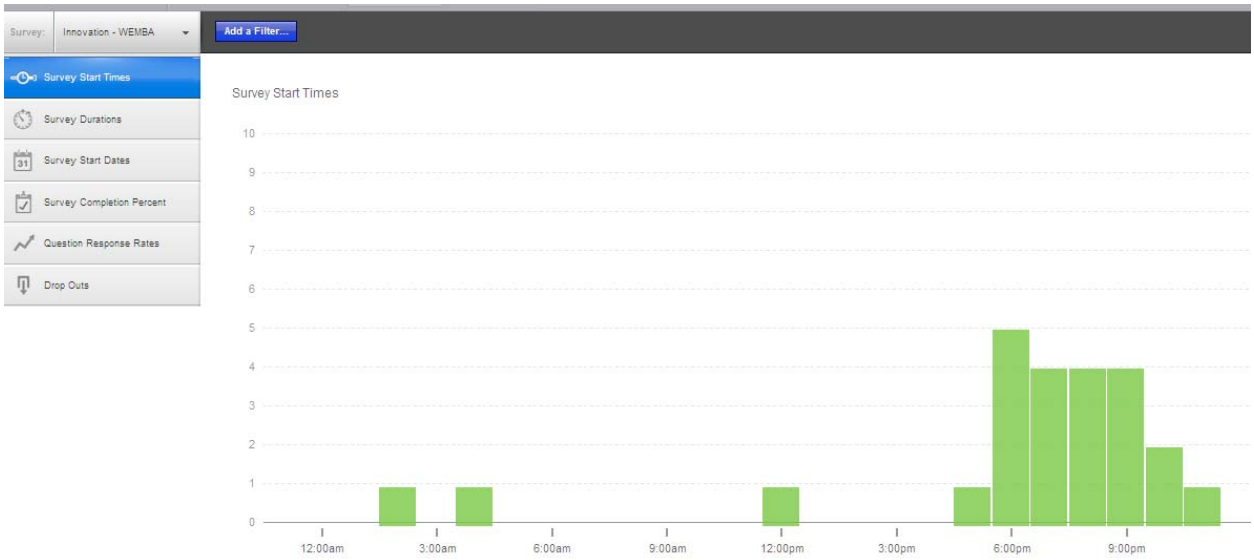
Survey Executives

We conducted the survey with our two focus groups “WEMBA Executives” and “Client Executives”. We received responses from 24 WEMBA executives out of 110 available in the WEMBA executive distribution list. We received responses from 8 out of 10 client executives we reached. All responders who started the survey completed the surveys and there were no drop outs. Each responder provided their name and organization validating the authenticity of surveys.

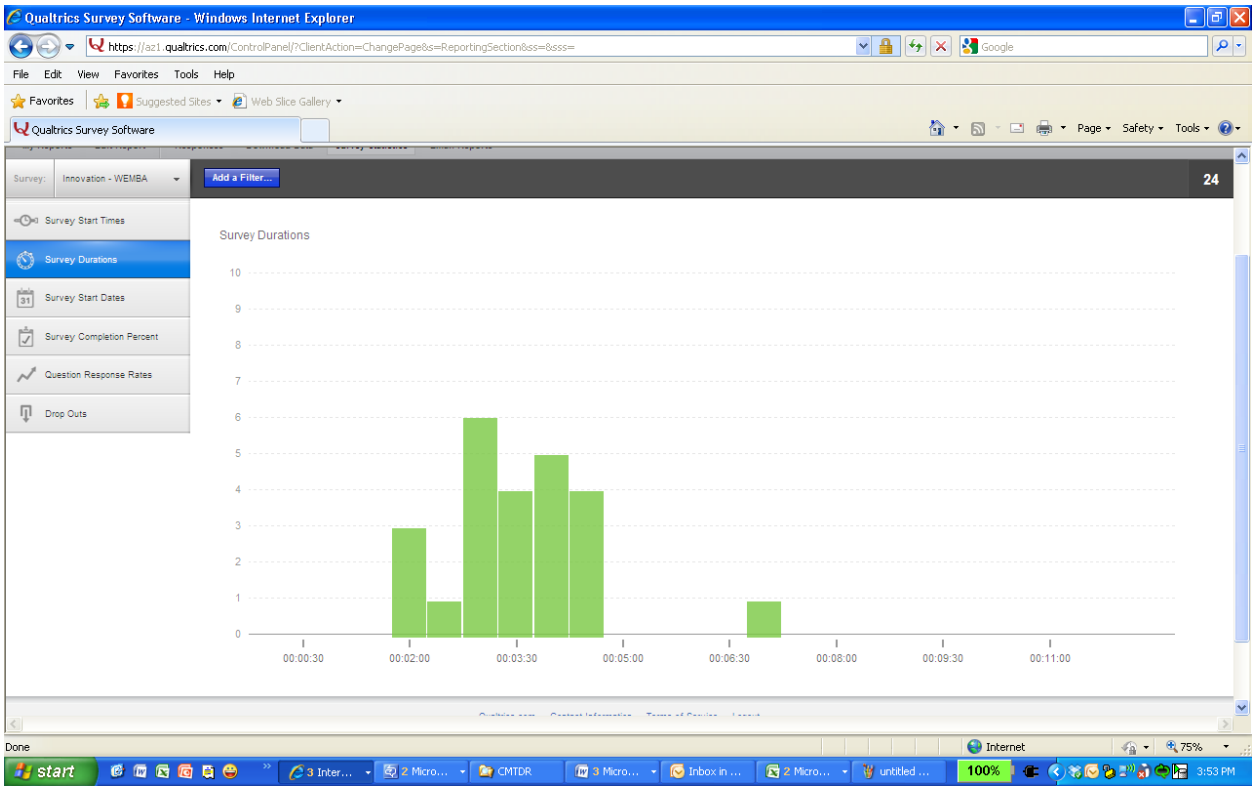
WEMBA Respondents

Name	Organization
Cindy Lewis	TIFF Advisory Services, Inc.
Thierry Carlier	IBA S.A.
Kenneth chang	Wharton
Gavin Zhong	Wolterskluwer
Brian Galinat	Delaware Orthopaedic Specialists
Edwin	Lenovo
Paul Garibov	GSN Group Inc
Walter Stuart	McKinsey
Robert Vendig	Deloitte
Kedar Mahadeshwar	IBM
Evan Wolf	Vanguard
Puneet Bakshi	Ctc
Mariana Lamson	Heartland Payment Systems, Inc.
Daniel Pohlig	The Campaign Group, Inc.
Borja Serrats	Banco Santander
Ashwin Gonibeed	T-Mobile
Mehul	Wharton
Ari Borthakur	CMROI, Dept. of Radiology, UPenn
Sourav Sen	St Jose
Amit Sood	nature9 Inc.
George Kiwada	Kiwada & Co
Arvind	Stony Brook
Akshay More	Goldman Sachs
J Greif	NA

Survey Start Time



Survey Durations



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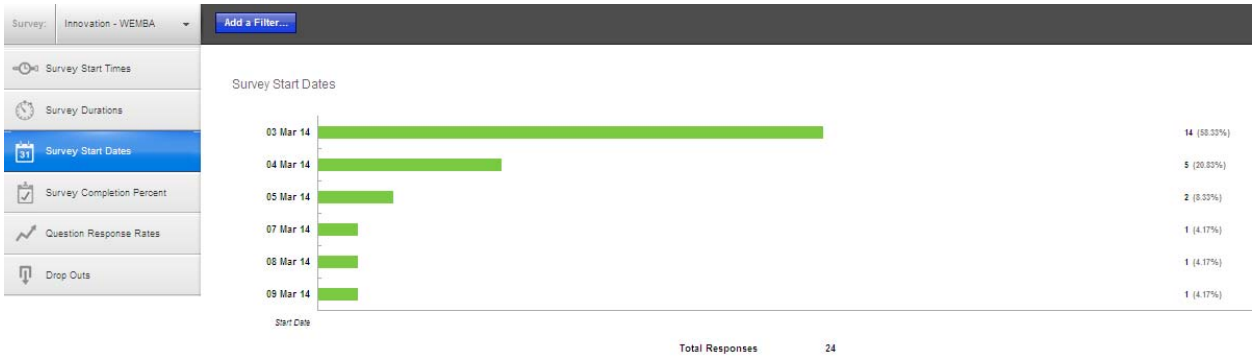
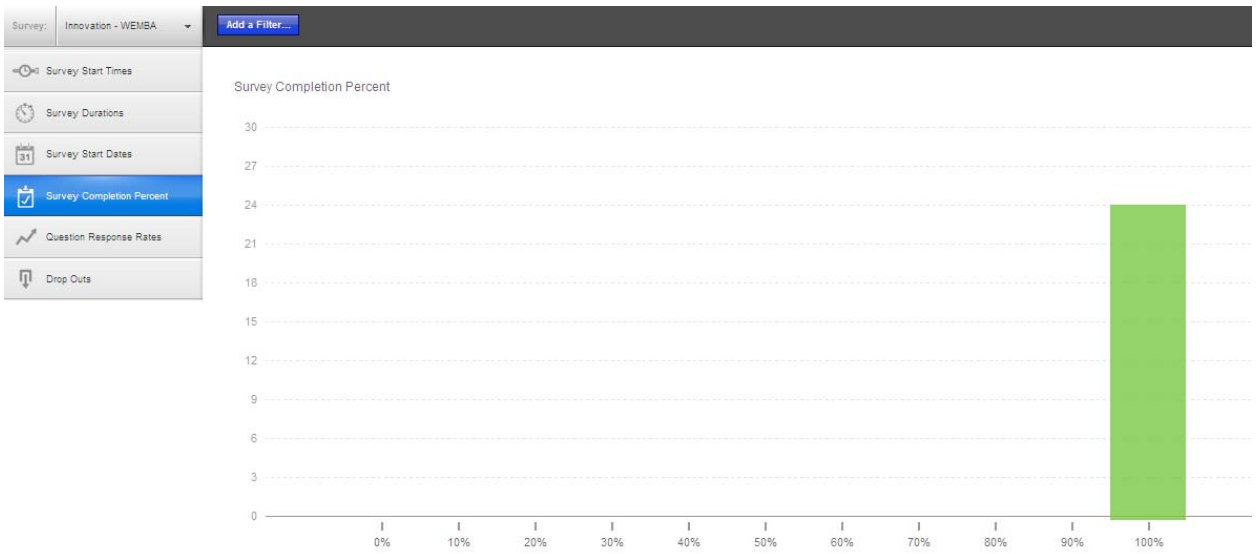


Survey Completion Percent



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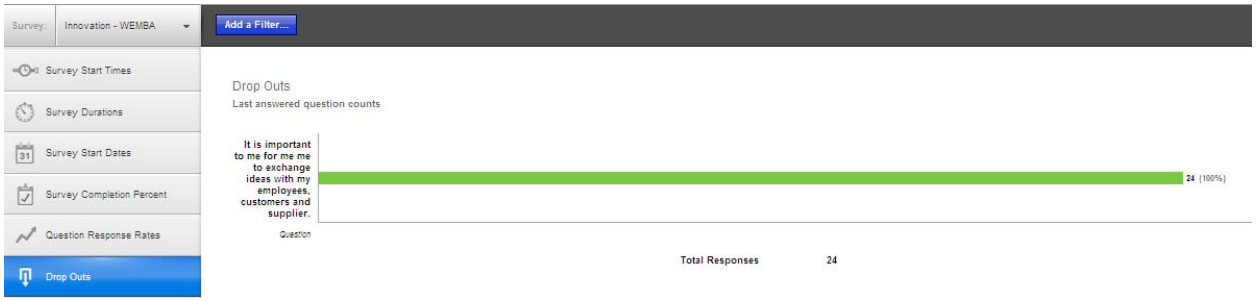
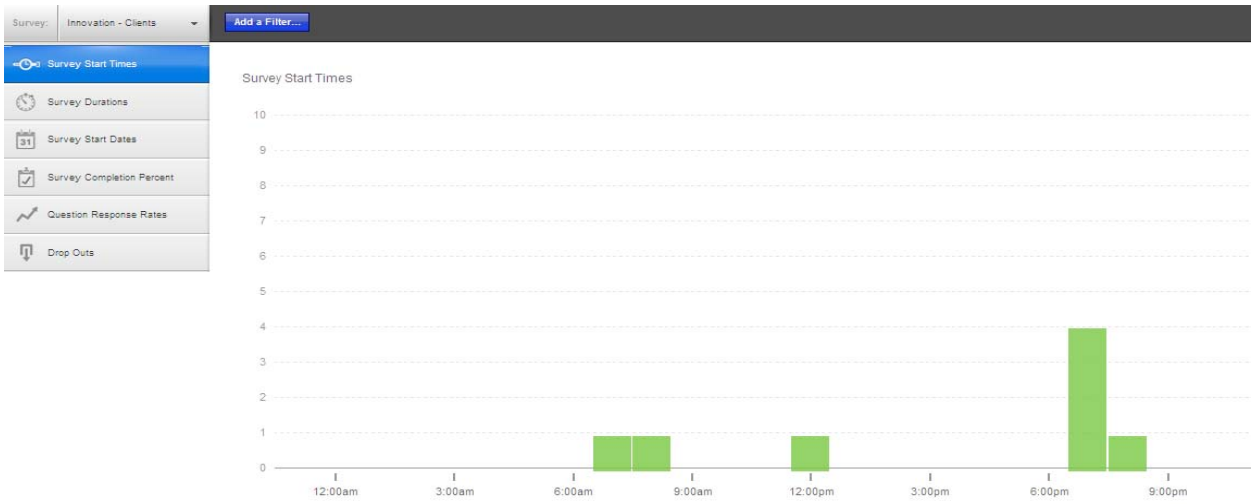


Client Respondents

Name	Organization
Bilas Das	Cigna
Alok Mallik	Ubs
Susmita Tripathy	Dassault systems
Sangya Padhi	Agero FKA Cross Country
Siba Satapathy	HCL America Inc
Sibasish Barik	Accenture
Mamata Barik	IBM
Sridhar Reddy	

Survey Start Time



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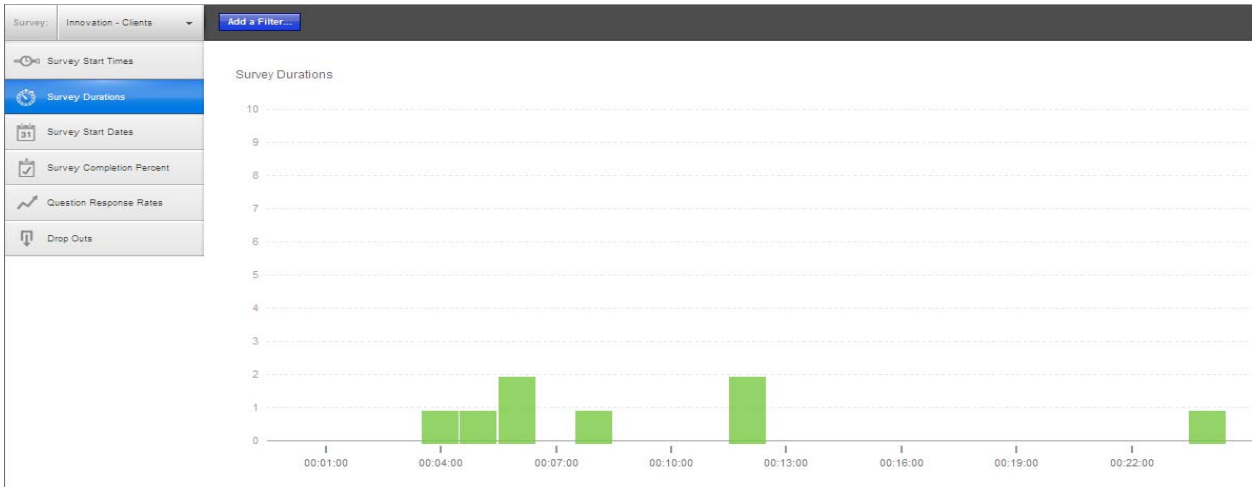
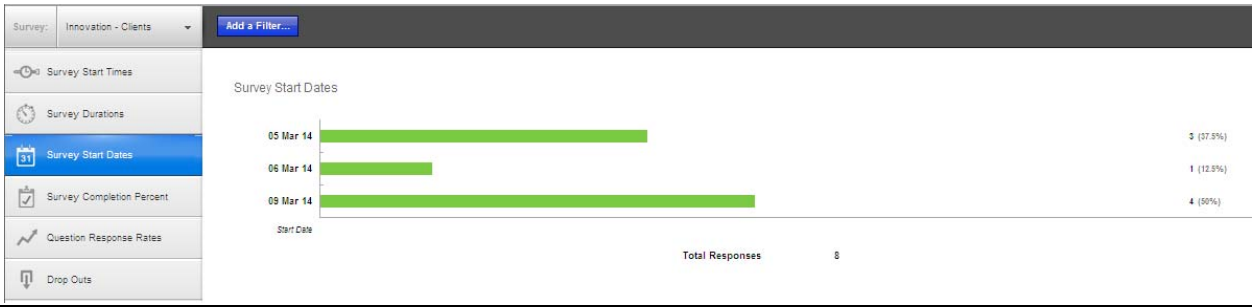
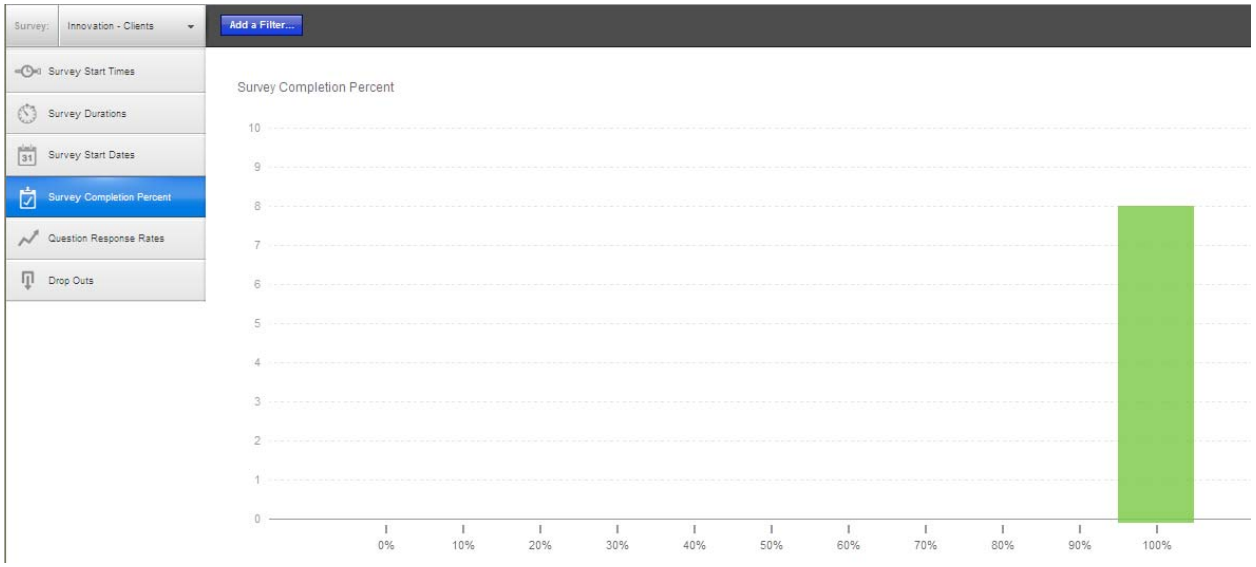


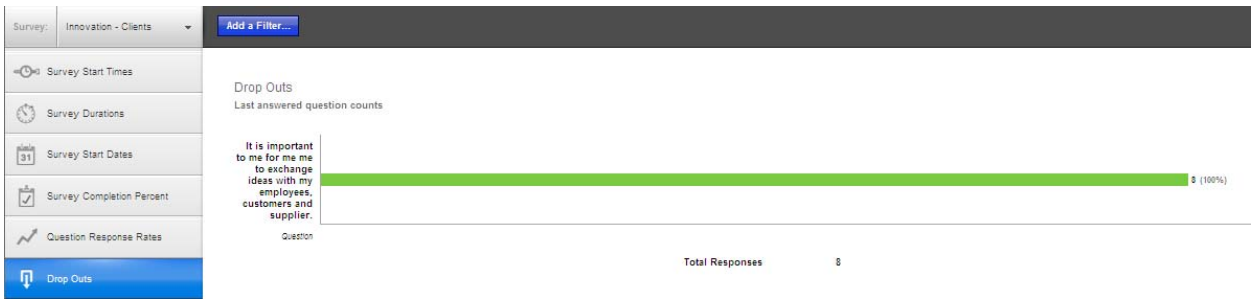
Survey Start Dates



Survey Completion Percent



Drop Outs



I. Mobile Technology Adoption

These research questions explore if mobile platforms offer a more compelling platform for delivering new services to clients.

WEMBA Executives: Average Likert Score for WEMBA executives are provided below.

I **use apps** running on mobile devices (Smart Phones/PDAs) as part of my day to day business operations	3.26
I find it **easier** to use apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers	2.96
I am more **engaged** with apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers	2.87
The small **size** of mobile devices (Smart Phones/PDAs) does not impact my willingness to try apps running on them	3.17

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q1	Answer	4	5	2	5	7	23	3.26
Q2	Answer	2	6	8	5	2	23	2.96
Q3	Answer	2	8	5	7	1	23	2.87
Q4	Answer	2	7	2	9	3	23	3.17

WEMBA Executives Inferences:

1. Slightly more executives use mobile apps compared to the ones that don't use
2. The executives find the mobile apps equivalent to desktop apps in terms of ease of use
3. The executives find the mobile apps equivalent to desktop apps in terms of engagement
4. Slightly more executives consider size of mobile devices immaterial compared to the ones that consider size as an important factor that determines their willingness to try apps

In summary, WEMBA executives consider mobile apps equivalent or slightly better than equivalent desktop apps when evaluating generic mobile apps without any reference to innovation. Interestingly, their answers will change later when you bring innovation into context.

Client Executives: Average Likert Score for client executives are provided below.

I **use apps** running on mobile devices (Smart Phones/PDAs) as part of my day to day business operations	4.00
I find it **easier** to use apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers	3.38
I am more **engaged** with apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers	3.75
The small **size** of mobile devices (Smart Phones/PDAs) does not impact my willingness to try apps running on them	4.00

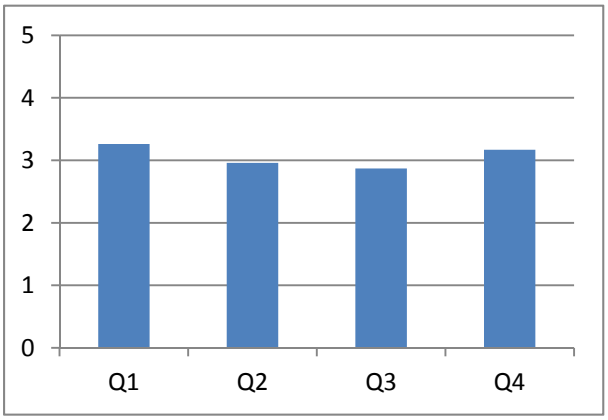
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q1	Answer	0	1	2	1	4	8	4.00
Q2	Answer	0	2	2	3	1	8	3.38
Q3	Answer	0	1	1	5	1	8	3.75
Q4	Answer	0	1	1	3	3	8	4.00

Client Executives Inferences:

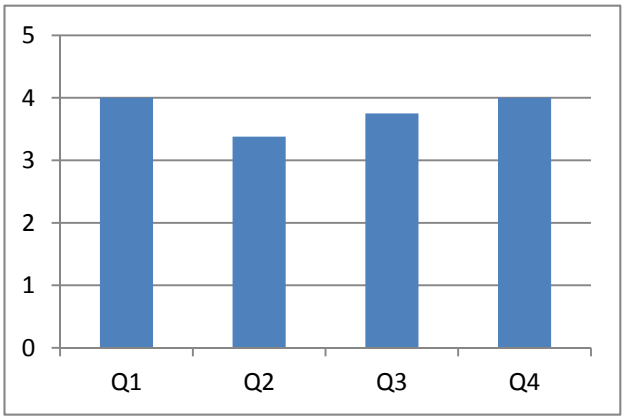
1. More executives use mobile apps compared to the ones that don't
2. More executives consider mobile apps easier to use compared to equivalent desktop apps
3. More executives find mobile apps more engaging compared to equivalent desktop apps
4. More executives find the size of mobile apps less of a deterrant in mobile app adoption

In summary, client executives with technology innovation background are more open to using mobile apps and hold a more favorable perspective on use of mobile apps and the engagment levels they generate, while at the same time they consider its small size less deterent for adoption.

WEMB Executive Response



Client Executive Response



The above graphs show the average Likert score for the groups in graphical form. The client executives show marked enthusiasm compared to lukewarm response from the cross section of WEMBA executives. The same enthusiasm is carried forward when innovation management is introduced in the context.

II. Innovation Participation

These research questions explore if participants are involved in the innovation management process and if the organization employs mature processes and tools for innovation management.

WEMBA Executives: Average Likert Score for WEMBA executives are provided below.

I actively **participate** in the innovation process in my organization	3.65
I would like to contribute new ideas to the organization in areas that management communicates to me as **strategic**	4.30
My organization employs a well defined **innovation process**	3.04
My organization uses **innovation management software** to manage the innovation process	2.22

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q5	Answer	0	4	4	11	4	23	3.65
Q6	Answer	0	0	2	12	9	23	4.30
Q7	Answer	3	4	8	5	3	23	3.04
Q8	Answer	4	10	9	0	0	23	2.22

WEMBA Executives Inferences:

5. More executives participate in the innovation process compared to ones that don't
6. An overwhelming majority of executives would like to contriute to new ideas in areas that the organization considers as strategic
7. As many organizations employ a well defined innovation process as the ones that don't
8. Strikingly none of the executives mention that their organization employ innovation manaement software

In summary, more executives participate in the innovation management process and most would like to contribute new ideas to strategic goals, but as many organizations employ a well defined process as the ones that don't and none seem to use innovation management software. This response makes a compelling case for introducing a well-designed innovation management software.

Client Executives: Average Likert Score for client executives are provided below.

I actively **participate** in the innovation process in my organization	3.88
I would like to contribute new ideas to the organization in areas that management communicates to me as **strategic**	4.00
My organization employs a well defined **innovation process**	4.13
My organization uses **innovation management software** to manage the innovation process	3.38

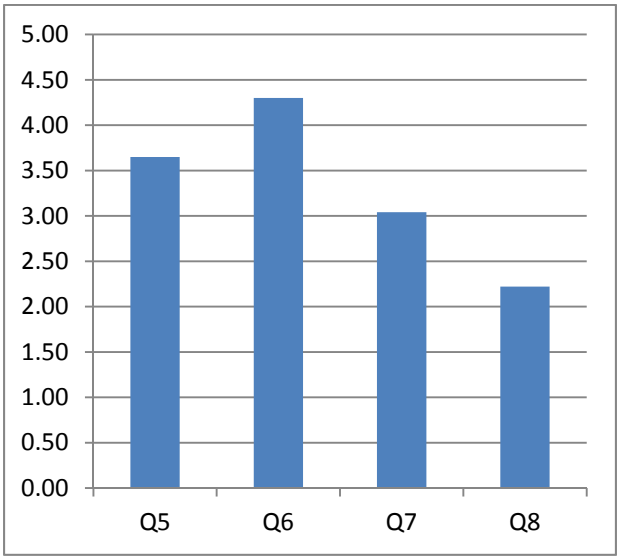
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q5	Answer	0	1	0	6	1	8	3.88
Q6	Answer	0	0	2	4	2	8	4.00
Q7	Answer	0	0	1	5	2	8	4.13
Q8	Answer	0	2	2	3	1	8	3.38

Client Executives Inferences:

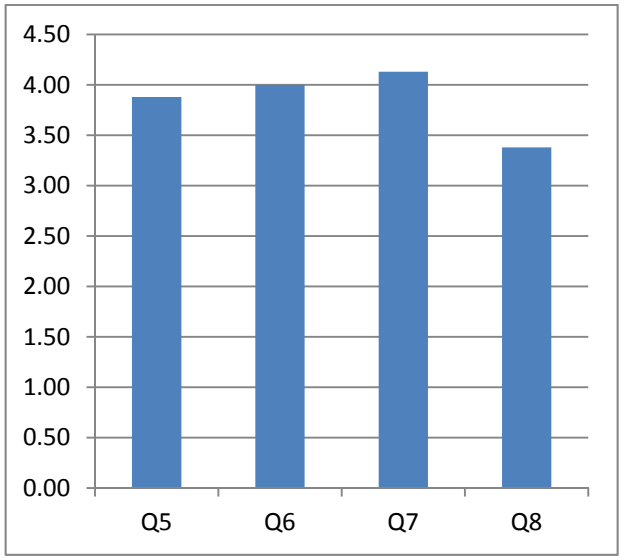
5. More executives participate in the innovation process compared to ones that don't
6. An overwhelming majority of executives would like to contriute to new ideas in areas that the organization considers as strategic
7. Most organizations employ a well defined innovation process
8. More organizations use some form of innovation management software compared to the ones that don't

In summary, more executives participate in the innovation management process and most would like to contribute new ideas to strategic goals, most employ some form of innovation management process and most use some innovation management software.

WEMBA Executive Response



Client Executive Response



This response gives a clear perspective that executives involved in innovation management and development have more exposure to innovation management processes and software compared to cross section of executives that WEMBA executives represent, while both participate in the innovation process and both are enthusiastic to contribute new ideas towards strategic goals of the organization.

III. Idea Sharing Across Supply Chain

These research questions explore if participants are interested in learning new ideas from across the supply chain and also if they are willing to contribute new ideas across the supply chain.

WEMBA Executives: Average Likert Score for WEMBA executives are provided below.

I would like to hear new ideas from our **customers**	4.22
I would like to hear new ideas from our **suppliers**	4.13
I would like to hear new ideas from our **partners**	4.22
I would like to contribute new ideas to **companies** whose products and services I use	4.13
I would like to contribute new ideas to our **clients** that use our products and services	4.13
I would like to contribute new ideas to **partners** that we work with	4.17
It is important to me for me to **exchange ideas** with my employees, customers and suppliers	4.22
I would like to learn the **summary of new ideas** coming from my extended supply chain	3.96

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q09	Answer	0	0	3	12	8	23	4.22
Q10	Answer	0	0	3	14	6	23	4.13
Q11	Answer	0	0	2	14	7	23	4.22
Q12	Answer	0	0	3	14	6	23	4.13
Q13	Answer	0	0	4	12	7	23	4.13
Q14	Answer	0	0	1	17	5	23	4.17
Q15	Answer	0	0	0	18	5	23	4.22
Q16	Answer	0	0	4	16	3	23	3.96

WEMBA Executives Inferences:

There is overwhelming consensus among WEMBA executives to learn new ideas from partners, suppliers and customers and contributing new ideas to them. All executives unanimously associate high importance with exchanging ideas with their extended supply chain participants. At senior executive level they would like to get a summary of new ideas being shared across the supply chain. This establishes critical importance of creating a social network for connecting an organization with its supply chain participants to facilitate exchange of new ideas.

Client Executives: Average Likert Score for client executives are provided below.

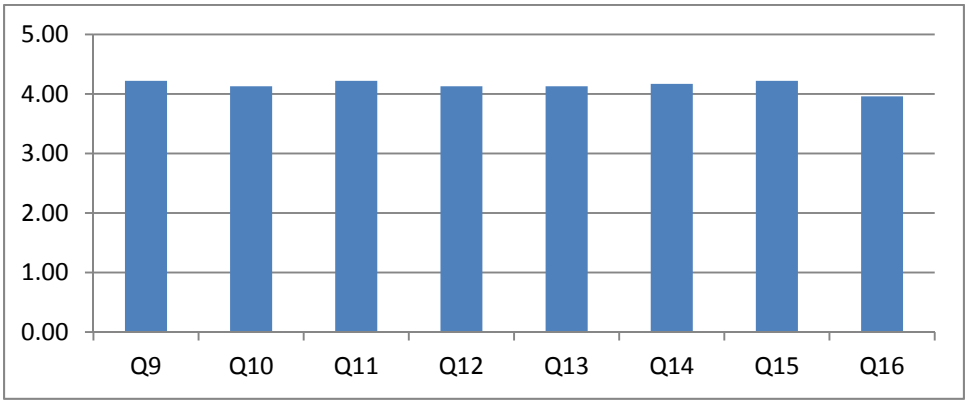
I would like to hear new ideas from our **customers**	4.63
I would like to hear new ideas from our **suppliers**	4.75
I would like to hear new ideas from our **partners**	4.63
I would like to contribute new ideas to **companies** whose products and services I use	4.13
I would like to contribute new ideas to our **clients** that use our products and services	4.25
I would like to contribute new ideas to **partners** that we work with	4.00
It is important to me for me me to **exchange ideas** with my employees, customers and suppliers	4.38
I would like to learn the **summary of new ideas** coming from my extended supply chain	4.13

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q09	Answer	0	0	0	3	5	8	4.63
Q10	Answer	0	0	0	2	6	8	4.75
Q11	Answer	0	0	0	3	5	8	4.63
Q12	Answer	0	0	0	7	1	8	4.13
Q13	Answer	0	0	0	6	2	8	4.25
Q14	Answer	0	0	1	6	1	8	4.00
Q15	Answer	0	0	0	5	3	8	4.38
Q16	Answer	0	0	1	5	2	8	4.13

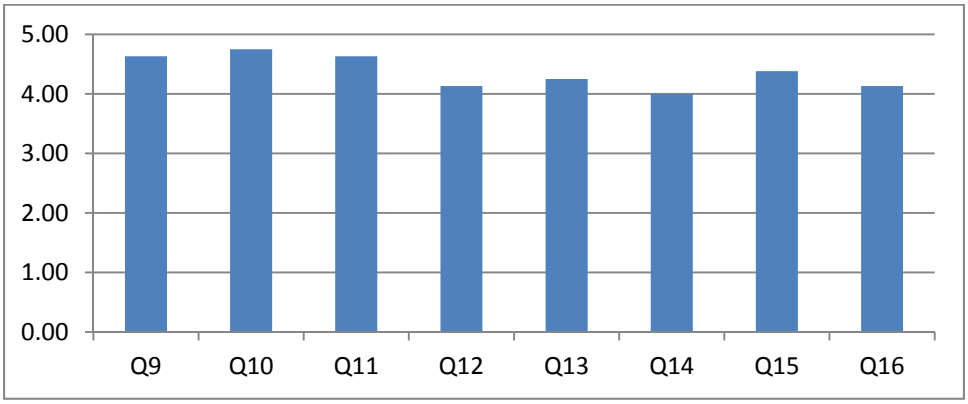
Client Executives Inferences:

There is overwhelming consensus among client executives to learn new ideas from partners, suppliers and customers and contributing new ideas to them. All executives unanimously associate high importance with exchanging ideas with their extended supply chain participants. At senior executive level they would like to get a summary of new ideas being shared across the supply chain. This establishes critical importance of creating a social network for connecting an organization with its supply chain participants to facilitate exchange of new ideas.

WEMBA Executive Response



Client Executive Response



Both WEMBA executive and technology client executives associate a high level of importance with exchanging ideas with customers, partners and suppliers in their extended supply chain. The technology client executives are marginally more motivated than WEMBA executives, but this can be dismissed with sampling error. The key takeaway here is that executives in general associate a lot of importance with connecting with their extended supply chain with a network that facilitates exchange of ideas.

IV. Innovation Management Using Mobile Devices Across Supply Chain

These research questions explore if participants are interested in participating in innovation management through mobile devices to connect with extended supply chain.

WEMBA Executives: Average Likert Score for WEMBA executives are provided below.

I would like to **post my ideas** through my mobile phone	3.17
I would like to **read about other's ideas** through my mobile phone	3.61
It is important for me to **exchange ideas** with others in real time irrespective of their location	3.87
The innovation management software we use is available on **mobile** devices	2.43
I would like to see the innovation management software available on my **mobile** devices	3.43
The innovation management software we use connects us with our **extended supply chain**	2.48
I would like to see the innovation management software connect me with our **extended supply chain**	3.39

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q17	Answer	0	8	5	8	2	23	3.17
Q18	Answer	0	0	11	10	2	23	3.61
Q19	Answer	0	0	4	18	1	23	3.87
Q20	Answer	5	4	13	1	0	23	2.43
Q21	Answer	0	2	9	12	0	23	3.43
Q22	Answer	4	5	13	1	0	23	2.48
Q23	Answer	0	1	14	6	2	23	3.39

WEMBA Executives Inferences:

17. Slightly more number of executives have shown number of executives have shown interest in posting their ideas through mobile phone compared to ones that did not
18. A large number of client executives have shown interest in reading other's ideas through mobile devices and no executive was opposed to the idea
19. Most executives overwhelmingly consider it important for them to exchange ideas with others in real-time irrespective of their location
20. Most executives confirm that the innovation management software they use, if any, are not available on mobile devices

21. A large number of executives have shown interest in having access to innovation management software through their mobile devices
22. Most executives confirm that the innovation management software they use, if any, do not connect them with their extended supply chain
23. A large number of executives have shown interest in having their innovation management software connect them with their extended supply chain for exchange of ideas

In summary, WEMBA executives associate value with exchanging ideas through mobile phones in real-time and would like to see innovation management softwar available on their mobile phones that connects them with their extended supply chain.

Client Executives: Average Likert Score for client executives are provided below.

I would like to **post my ideas** through my mobile phone	3.88
I would like to **read about other's ideas** through my mobile phone	3.88
It is important for me to **exchange ideas** with others in real time irrespective of their location	4.25
The innovation management software we use is available on **mobile** devices	2.88
I would like to see the innovation management software available on my **mobile** devices	3.75
The innovation management software we use connects us with our **extended supply chain**	2.88
I would like to see the innovation management software connect me with our **extended supply chain**	3.88

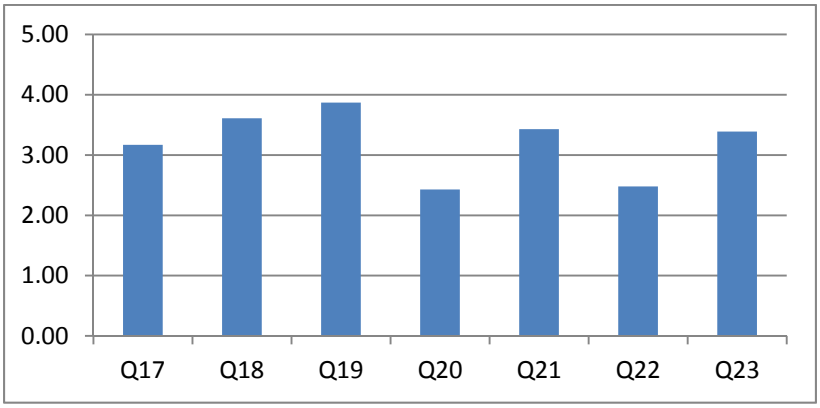
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
Q17	Answer	0	0	3	3	2	8	3.88
Q18	Answer	0	0	3	3	2	8	3.88
Q19	Answer	0	0	0	6	2	8	4.25
Q20	Answer	0	4	2	1	1	8	2.88
Q21	Answer	0	1	1	5	1	8	3.75
Q22	Answer	0	3	3	2	0	8	2.88
Q23	Answer	0	0	2	5	1	8	3.88

Client Executives Inferences:

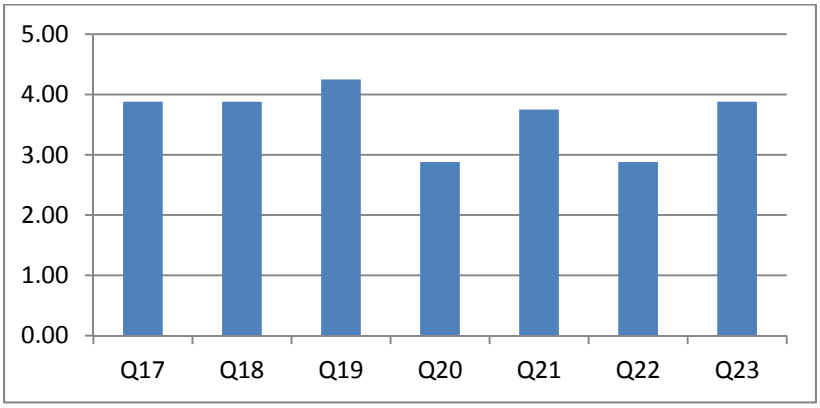
17. Most executives have shown number of executives have shown interest in posting their ideas through mobile phone compared to none that consider it negatively
18. Most executives have shown interest in reading other's ideas through mobile devices and no executive was opposed to the idea
19. Most executives overwhelmingly consider it important for them to exchange ideas with others in real-time irrespective of their location
20. Most executives confirm that the innovation management software they use, if any, are not available on mobile devices
21. A large number of executives have shown interest in having access to innovation management software through their mobile devices
22. Most executives confirm that the innovation management software they use, if any, do not connect them with their extended supply chain
23. A large number of executives have shown interest in having their innovation management software connect them with their extended supply chain for exchange of ideas

In summary, client executives associate value with exchanging ideas through mobile phones in real-time and would like to see innovation management softwar available on their mobile phones that connects them with their extended supply chain.

WEMBA Executive Response



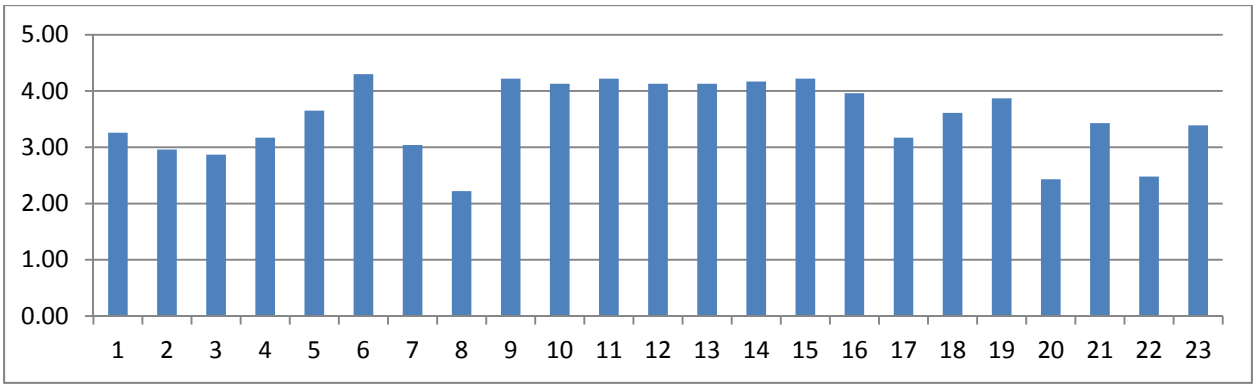
Client Executive Response



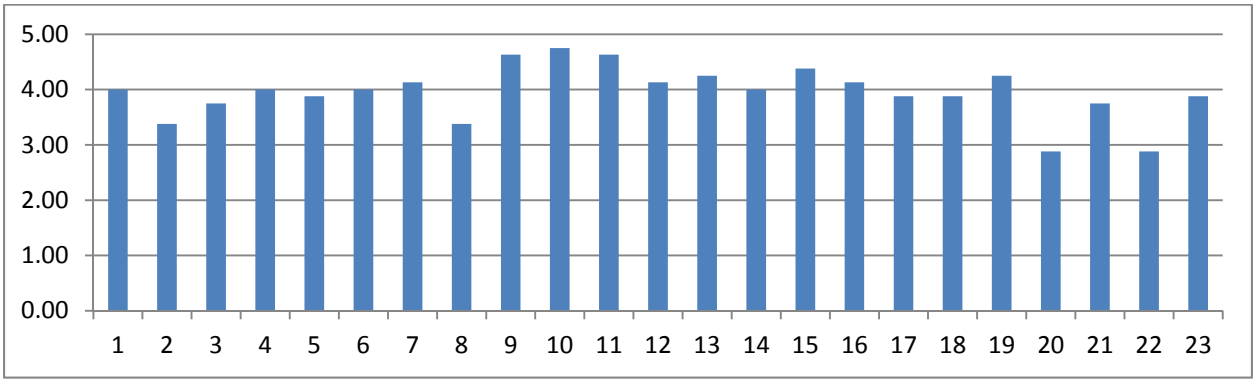
Both, WEMBA executives and technology client executives have expressed almost equal desire to communicate new ideas in real-time through their mobile devices with participants across the supply chain. The technology client executives are slightly more motivated to participate in such innovation management software through mobile social networks due to their better exposure to such technologies, processes and tools.

V. Survey Integration

While WEMBA executives started off with a lukewarm response to mobile applications in isolation, they have shown great enthusiasm in area of innovation participation, in exchanging ideas with participants in their extended supply chain and in using an innovation management software that helps them exchange ideas in real-time with others through their mobile devices and that connects them with the supply chain participants through a mobile social network.



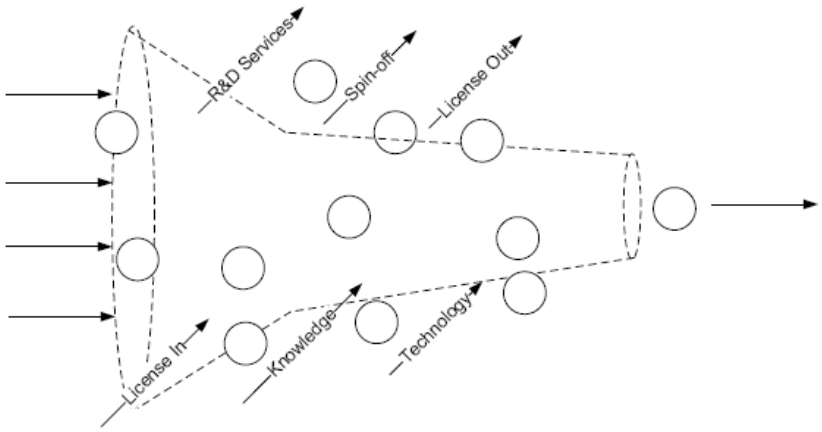
Client executives with exposure to technology innovation and management and with exposure to processes and tools in innovation management, have consistently shown more enthusiasm in valuing use of mobile applications, in innovation participation, in connecting with extended supply chain and in using innovation management software that helps them exchange ideas in real-time with others through their mobile devices and that connects them with the supply chain participants through a mobile social network.



On the outset, it may appear that executives dealing with technology innovation should be the target market segment considering their willingness to try mobile apps, and their familiarity with the innovation processes and tools, but with a deeper look it appears that an innovation management software that connects executives with employees in the organization and participants in their extended supply chain and accessible in real-time through mobile devices holds universal appeal with executives across all segments.

Conclusion

The innovation process has broken past the confines of traditional organizations and given rise to “Open Innovations” [Carbone, Contreras, Hernandez] that extends its reach beyond the R&D labs to larger employee base, customers, suppliers and partners.



Innovation mobile networks that bring all these key participants together, promotes them to share their ideas to pursue innovation together has potential to endanger more radical innovations along with some incremental innovations. Mobile technology with its ease of use and high potential for adoption will motivate more engaged participation from the audience and drive them to contribute more to the innovation process.

The survey undertaken with WEMBA executives and client executives dealing with technology innovations have shown that there is a great appetite for innovation management software that enables exchange of ideas in real-time through mobile devices by connecting employees, customers, partners and supplier through an extended social network.

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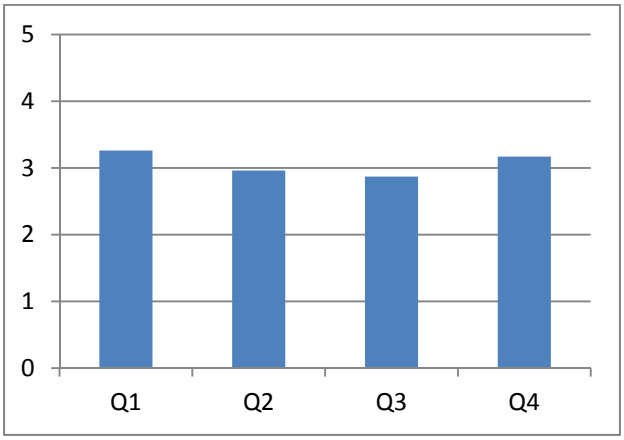
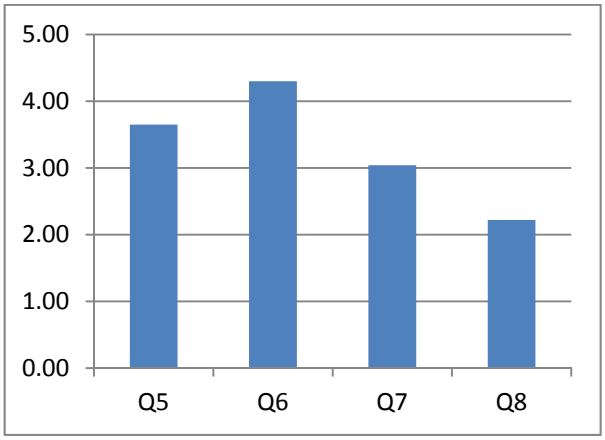
Appendix A: WEMBA Executive Survey

The graphs depicting the Average Likert Scale score is depicted below.

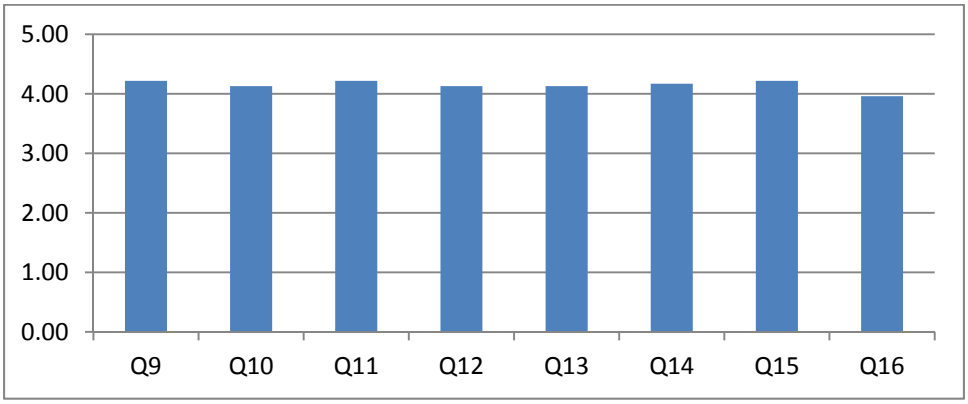
Mobile Technology Adoption



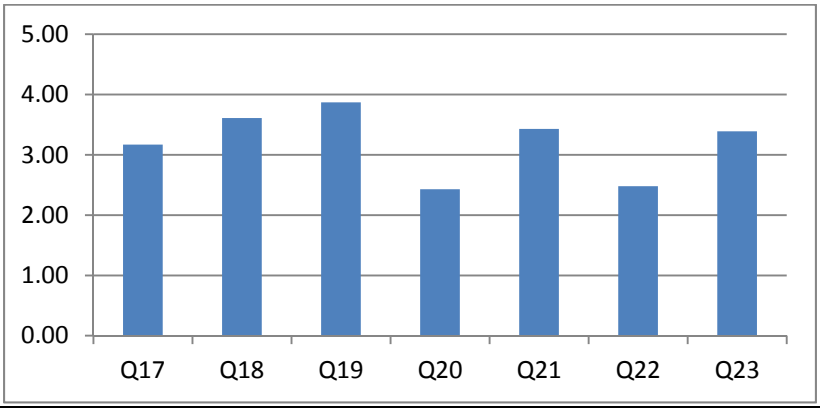
Innovation Participation



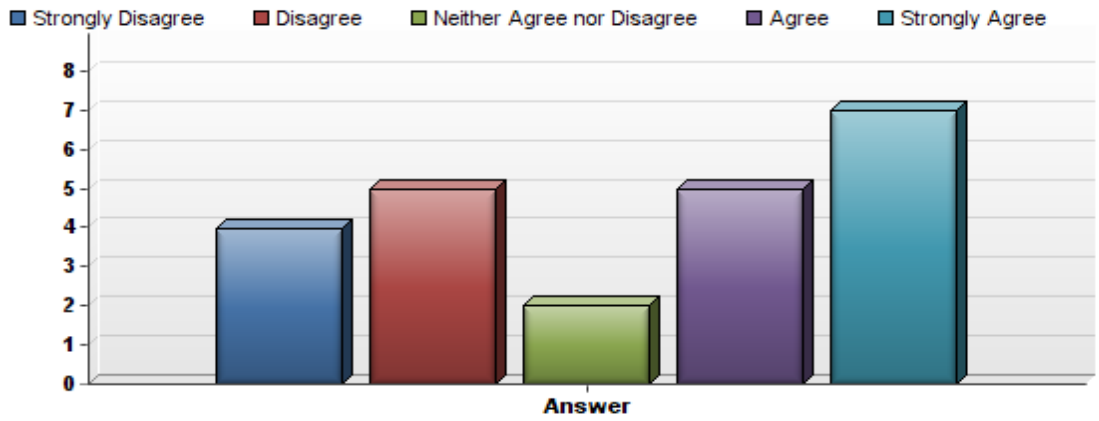
Idea Sharing Across Supply Chain



Innovation Management Using Mobile Devices Across Supply Chain

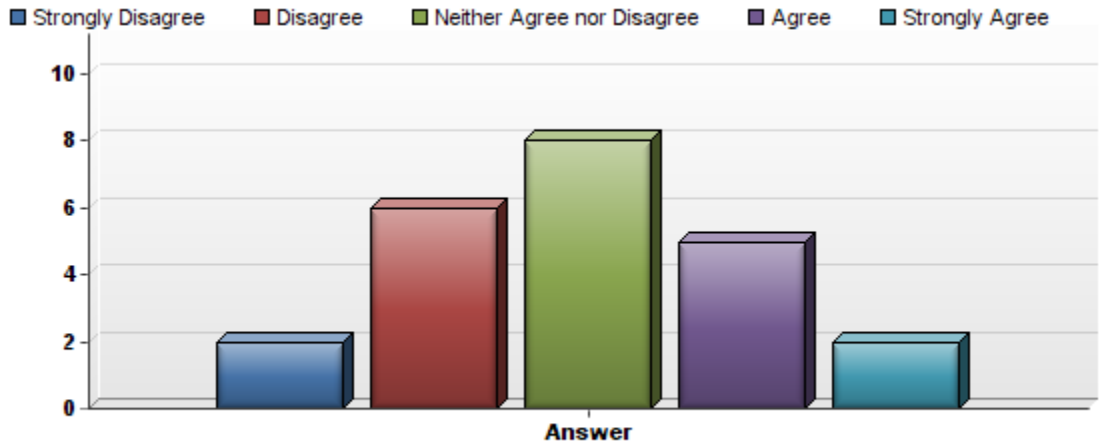


1. I use apps running on mobile devices (Smart Phones/PDAs) as part of my day to day business operations.



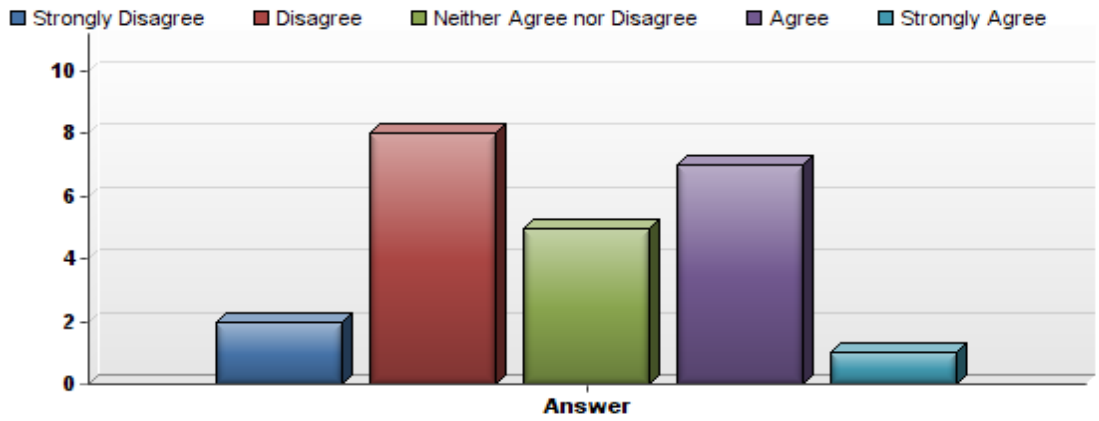
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	4	5	2	5	7	23	3.26

2. I find it easier to use apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers.



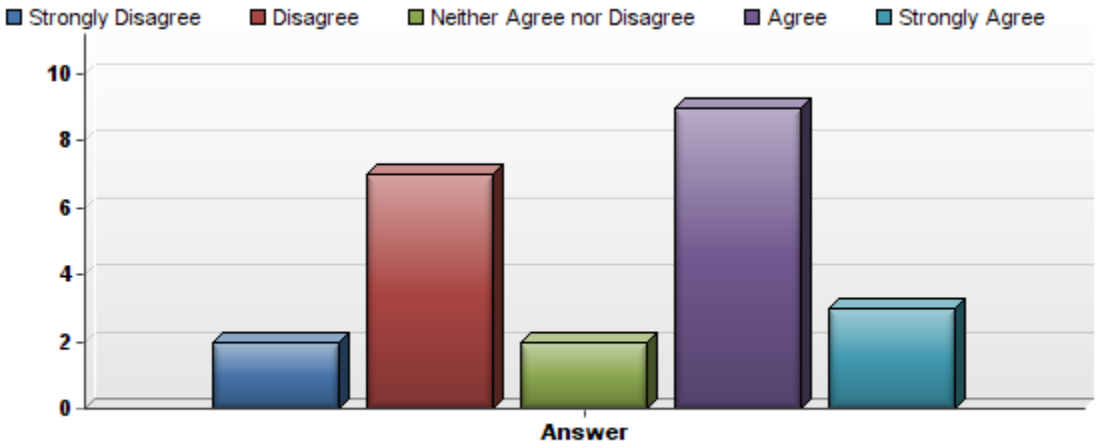
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	2	6	8	5	2	23	2.96

3. I am more engaged with apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers.



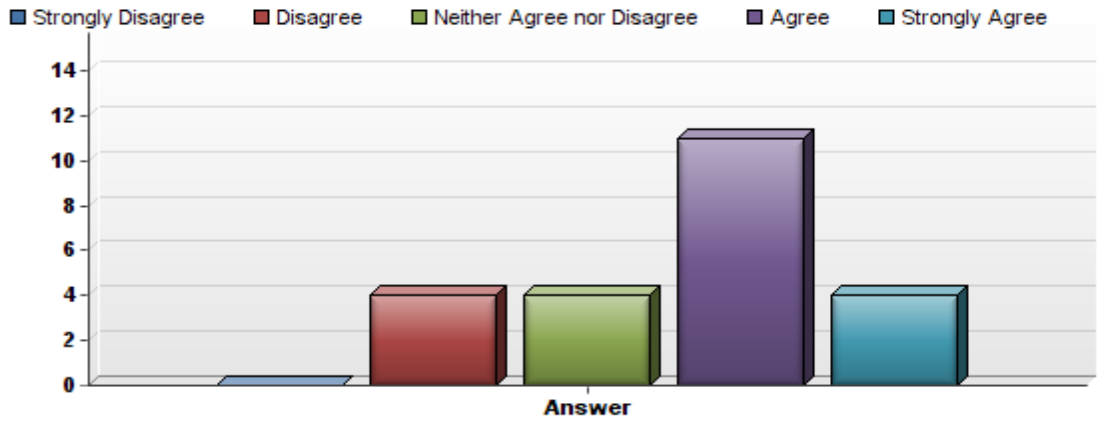
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	2	8	5	7	1	23	2.87

4. The small size of mobile devices (Smart Phones/PDAs) does not impact my willingness to try apps running on them.



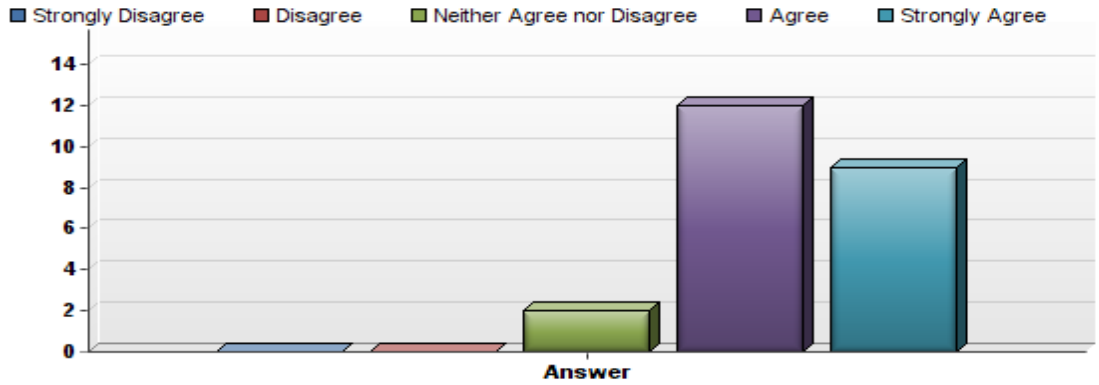
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	2	7	2	9	3	23	3.17

5. I actively participate in the innovation process in my organization.



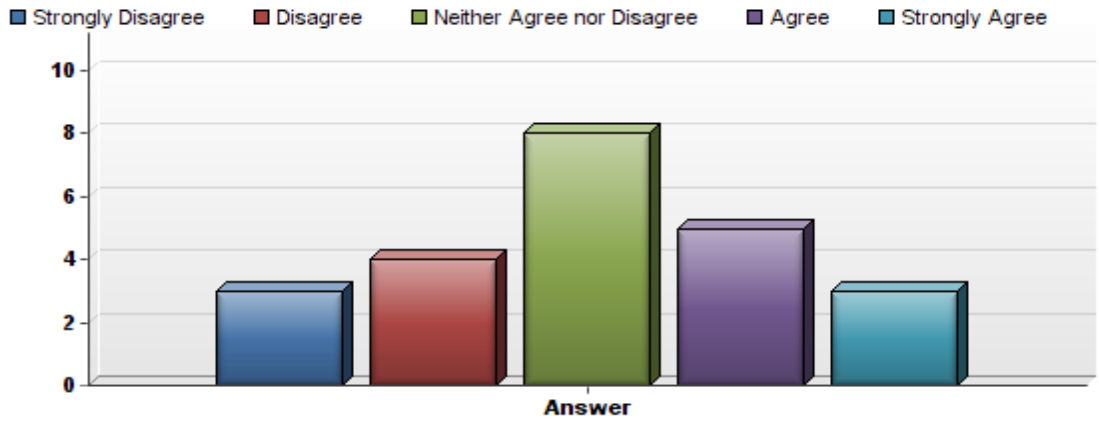
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	4	4	11	4	23	3.65

6. I would like to contribute new ideas to the organization in areas that management communicates to me as strategic.



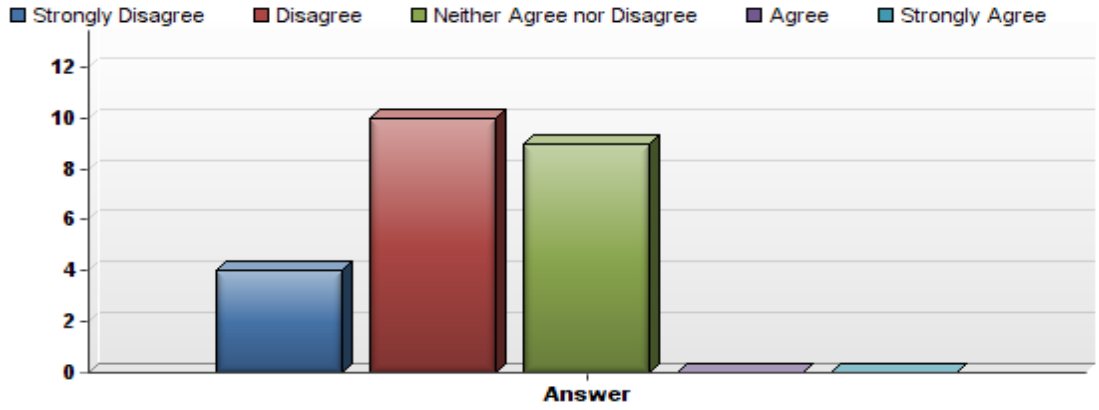
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	2	12	9	23	4.30

7. My organization employs a well defined innovation process.



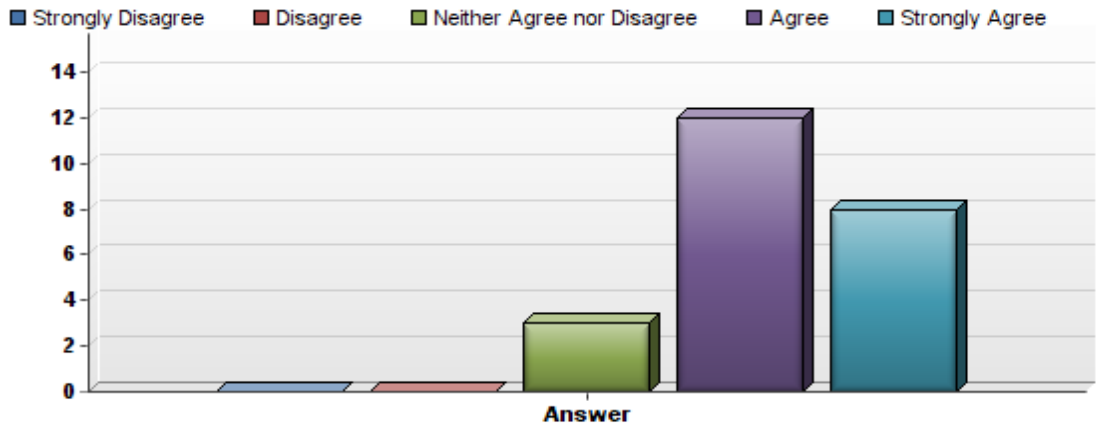
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	3	4	8	5	3	23	3.04

8. My organization uses innovation management software to manage the innovation process.



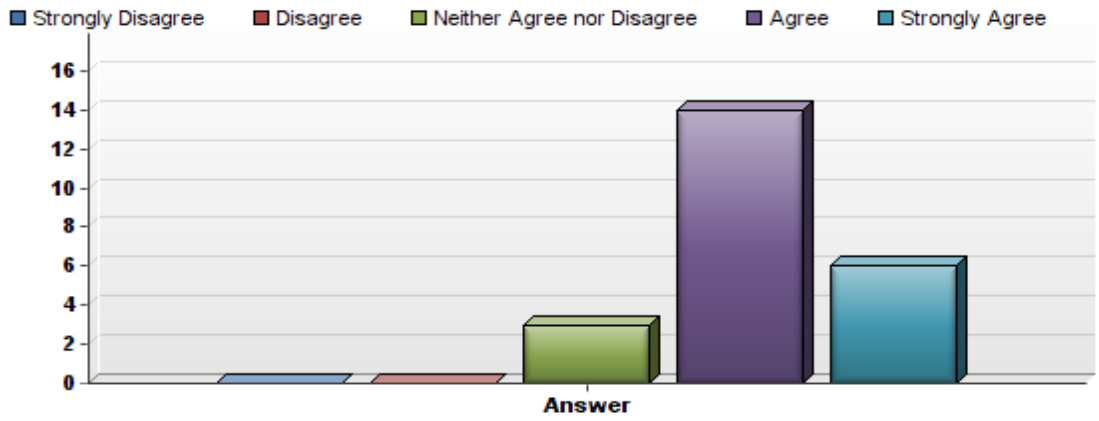
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	4	10	9	0	0	23	2.22

9. I would like to hear new ideas from our customers.



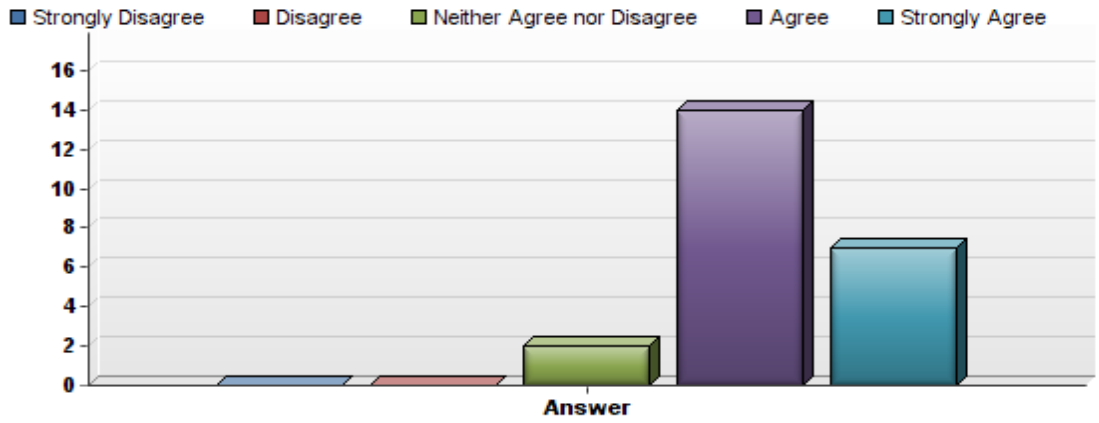
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	3	12	8	23	4.22

10. I would like to hear new ideas from our suppliers.



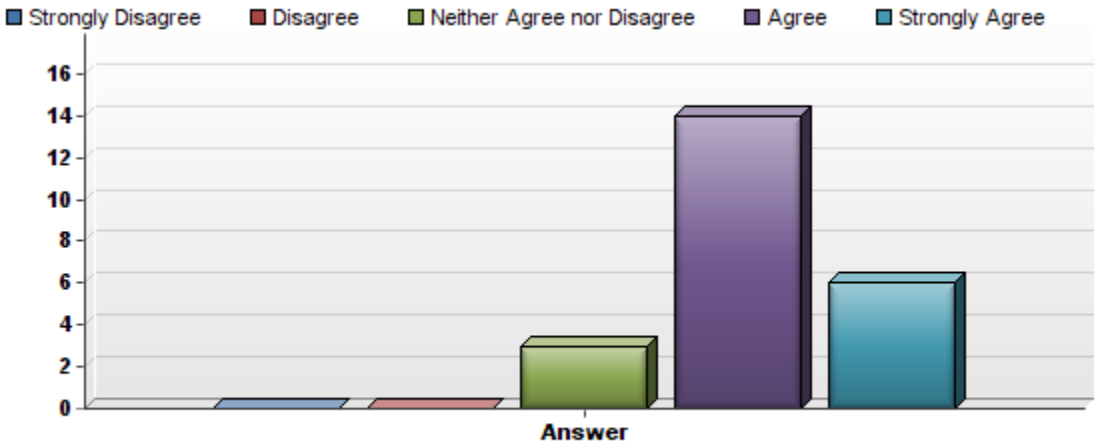
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	3	14	6	23	4.13

11. I would like to hear new ideas from our partners.



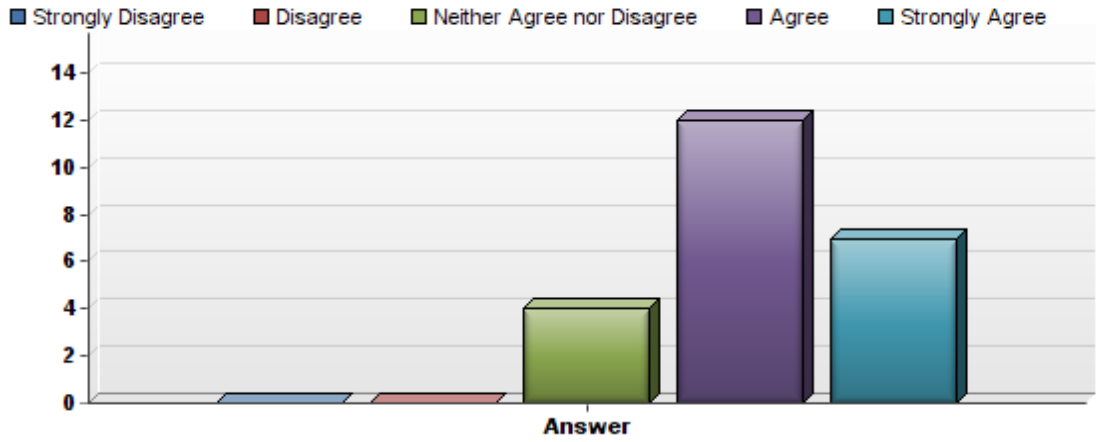
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	2	14	7	23	4.22

12. I would like to contribute new ideas to companies whose products and services I use.



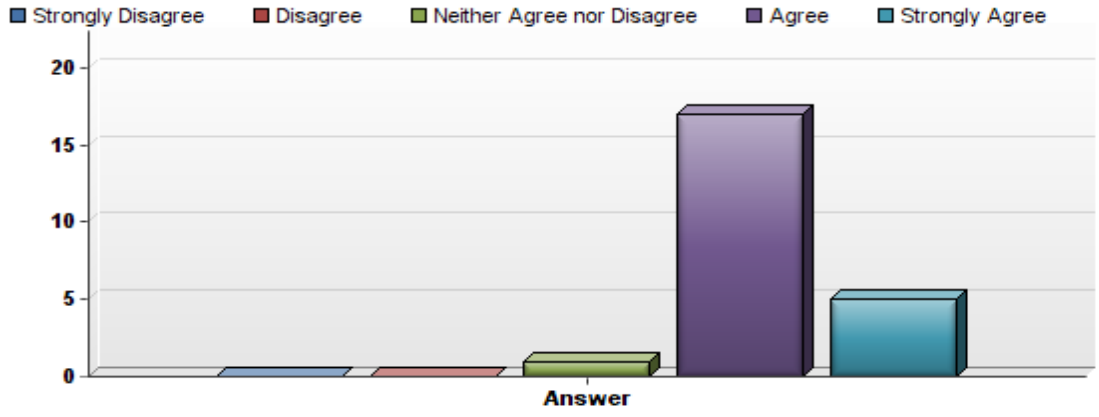
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	3	14	6	23	4.13

13. I would like to contribute new ideas to our clients that use our products and services.



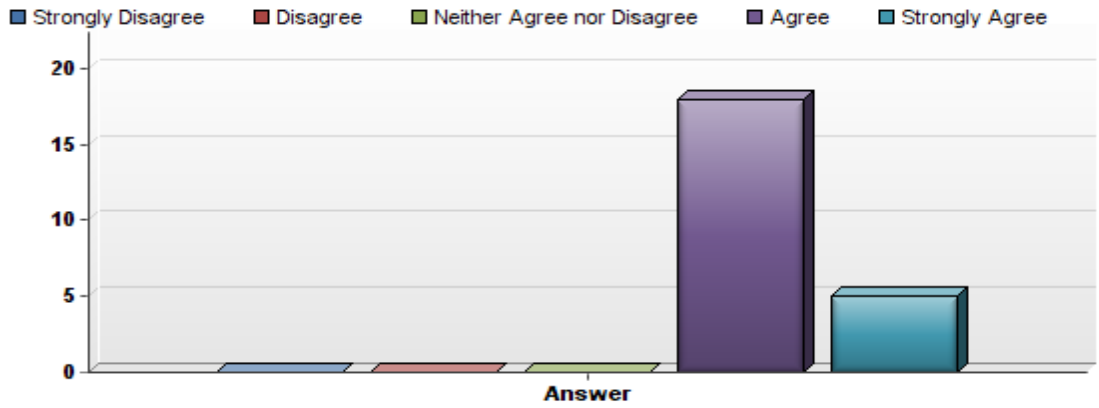
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	4	12	7	23	4.13

14. I would like to contribute new ideas to partners that we work with.



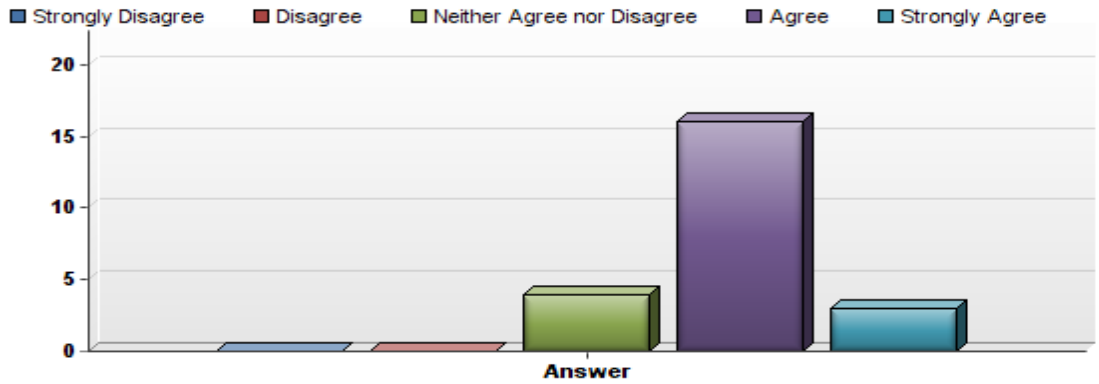
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	1	17	5	23	4.17

15. It is important to me for me me to exchange ideas with my employees, customers and supplier.



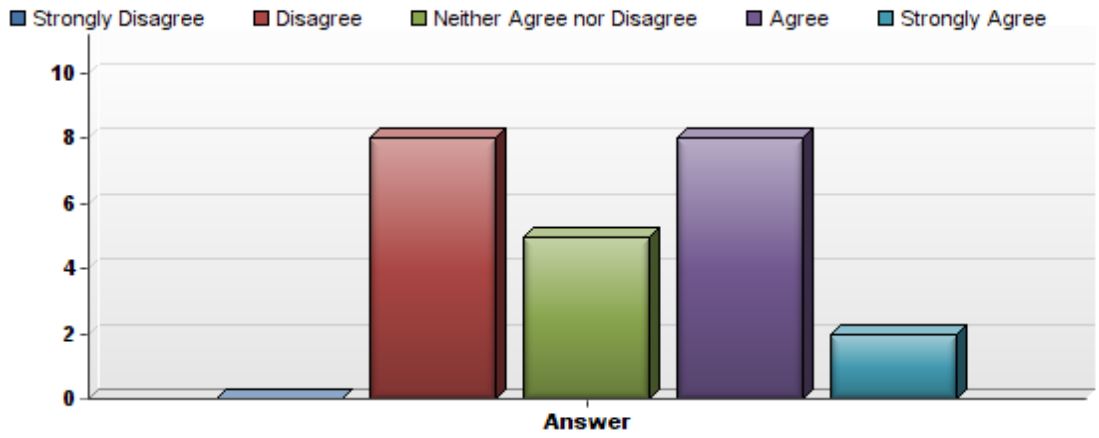
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	18	5	23	4.22

16. I would like to learn the summary of new ideas coming from my extended supply chain.



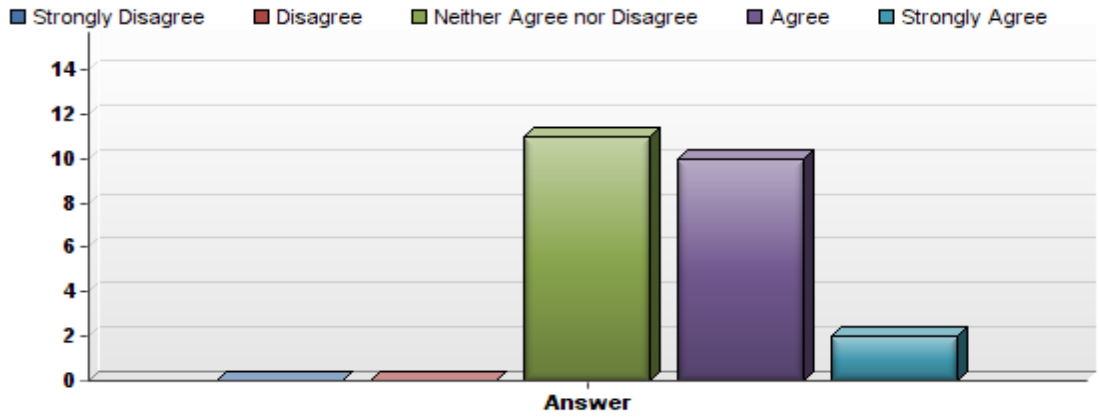
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	4	16	3	23	3.96

17. I would like to post my ideas through my mobile phone.



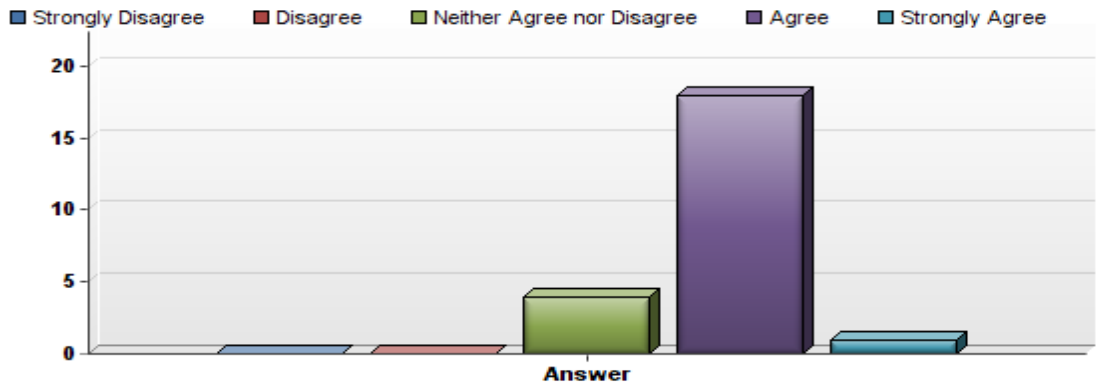
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	8	5	8	2	23	3.17

18. I would like to read about other's ideas through my mobile phone.



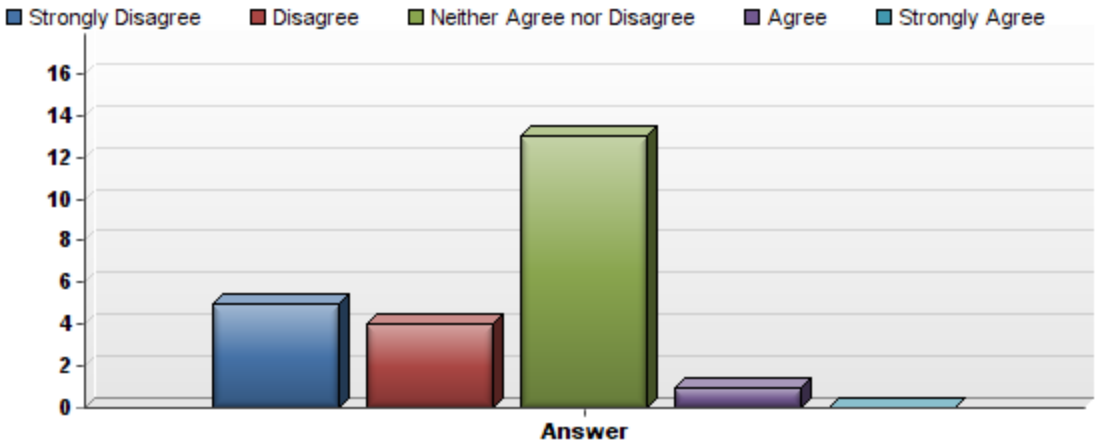
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	11	10	2	23	3.61

19. It is important for me to exchange ideas with others in real time irrespective of their location.



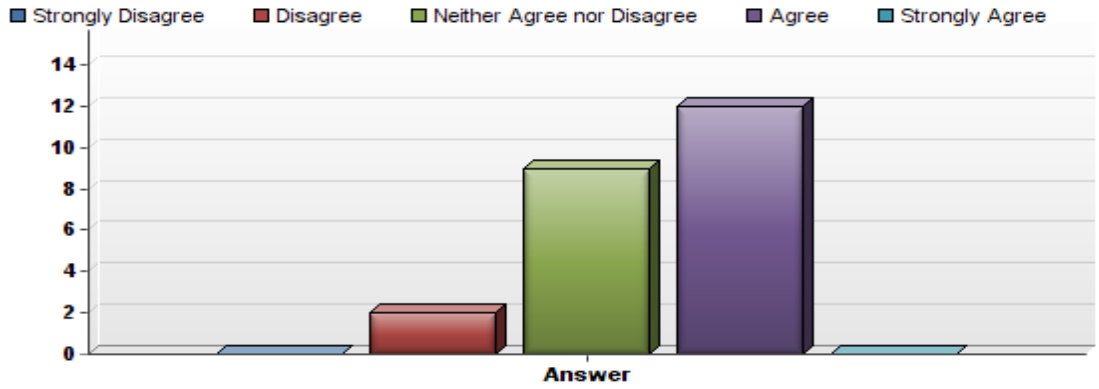
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	4	18	1	23	3.87

20. The innovation management software we use is available on mobile devices.



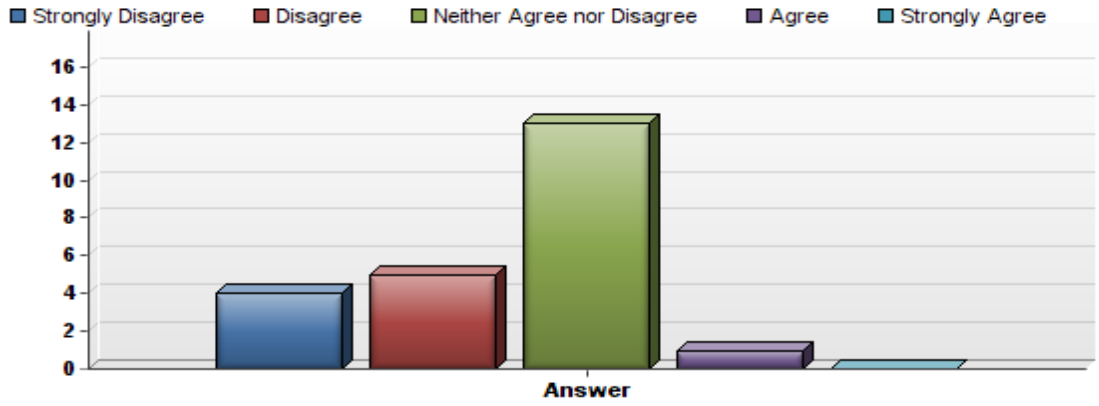
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	5	4	13	1	0	23	2.43

21. I would like to see the innovation management software available on my mobile devices.



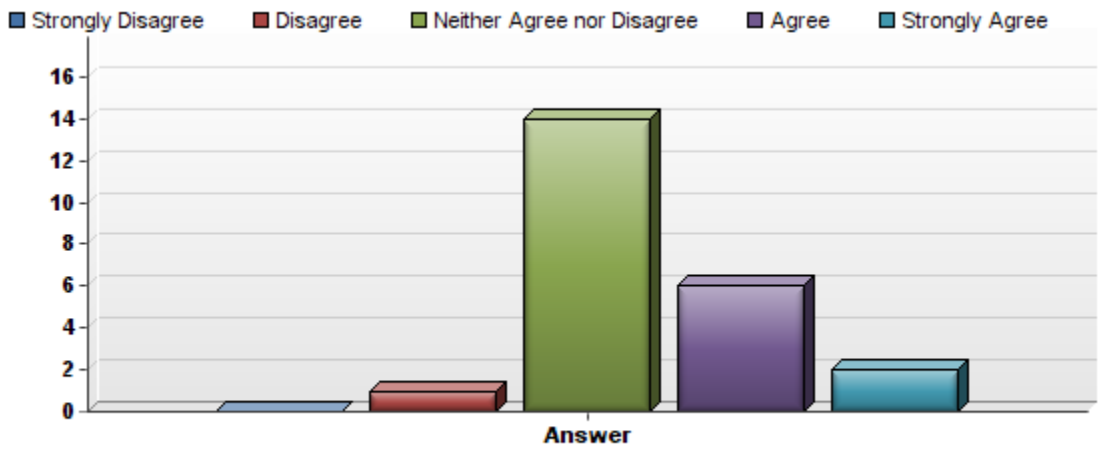
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	2	9	12	0	23	3.43

22. The innovation management software we use connects us with our extended supply chain.



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	4	5	13	1	0	23	2.48

23. I would like to see the innovation management software connect me with our extended supply chain.

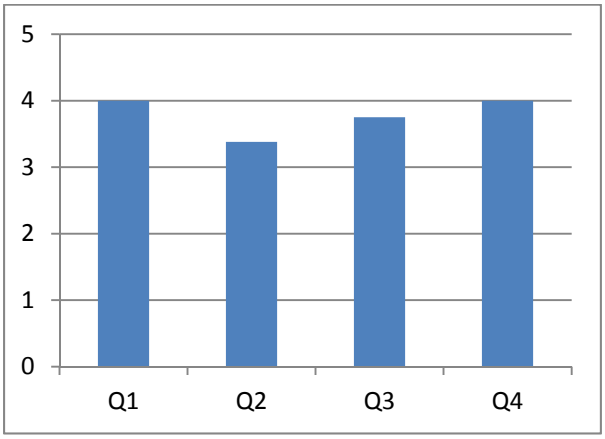


#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	14	6	2	23	3.39

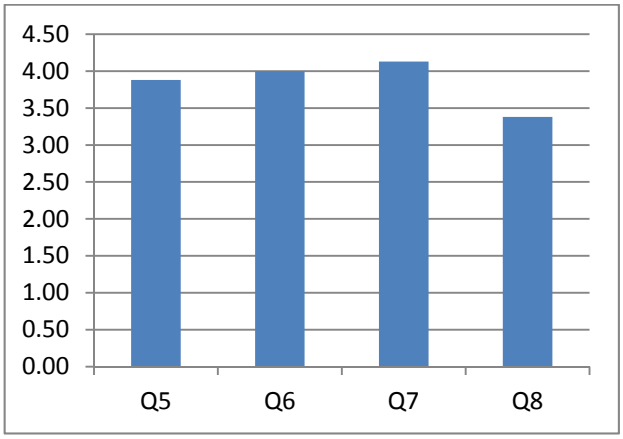
Appendix B: WEMBA Executive Survey

The graphs depicting the Average Likert Scale score is depicted below.

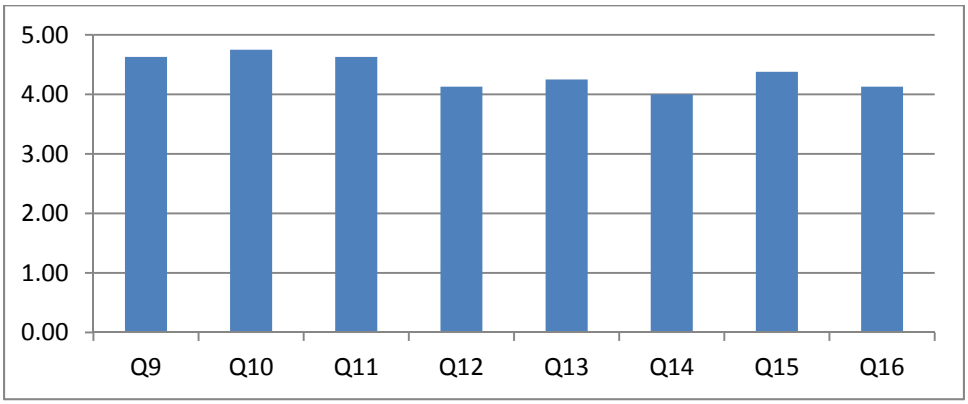
Mobile Technology Adoption



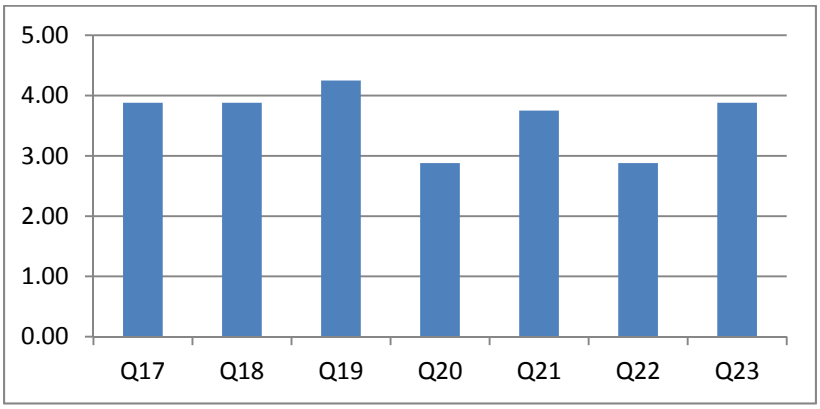
Innovation Participation



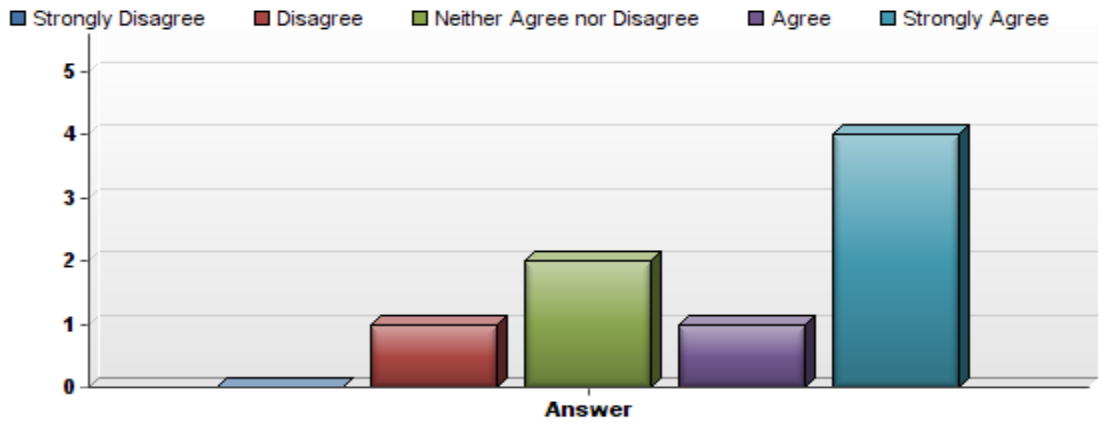
Idea Sharing Across Supply Chain



Innovation Management Using Mobile Devices Across Supply Chain

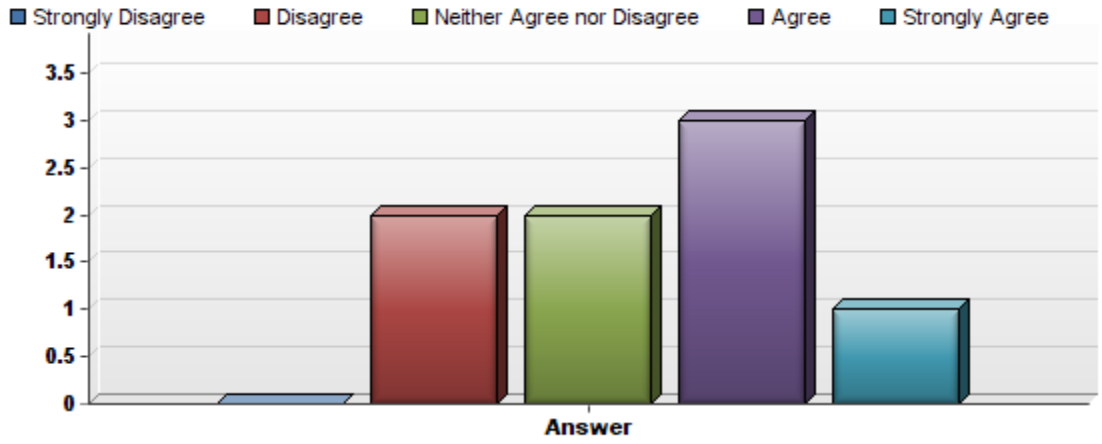


1. I use apps running on mobile devices (Smart Phones/PDAs) as part of my day to day business operations.



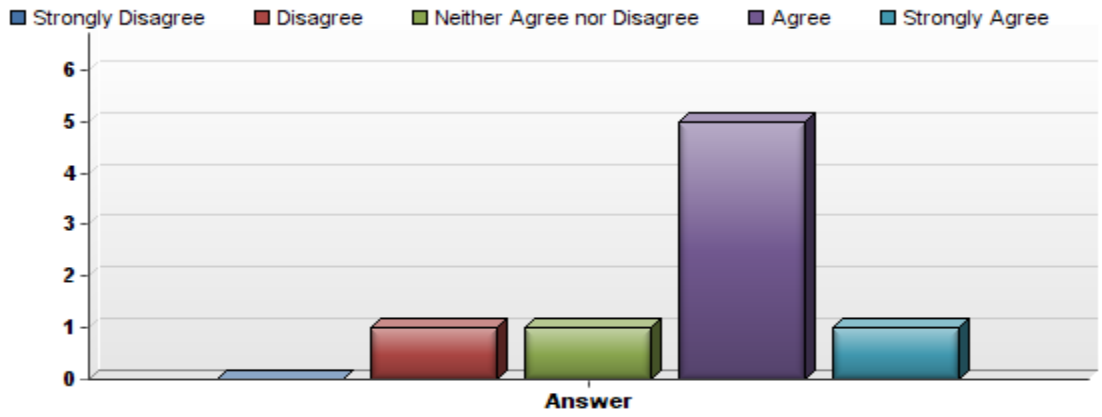
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	2	1	4	8	4.00

2. I find it easier to use apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers.



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	2	2	3	1	8	3.38

3. I am more engaged with apps running on mobile devices (Smart Phones/PDAs) than same apps running on my office computers.

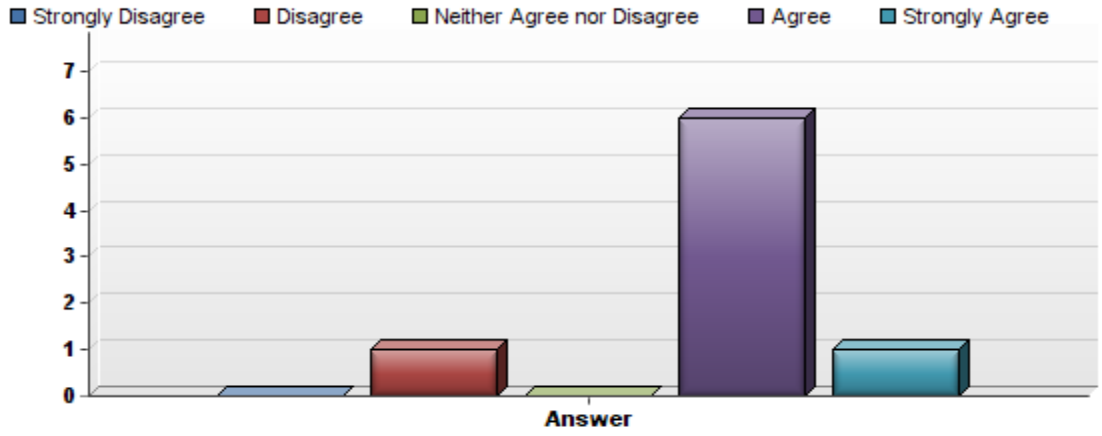


#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	1	5	1	8	3.75

4. The small size of mobile devices (Smart Phones/PDAs) does not impact my willingness to try apps running on them.

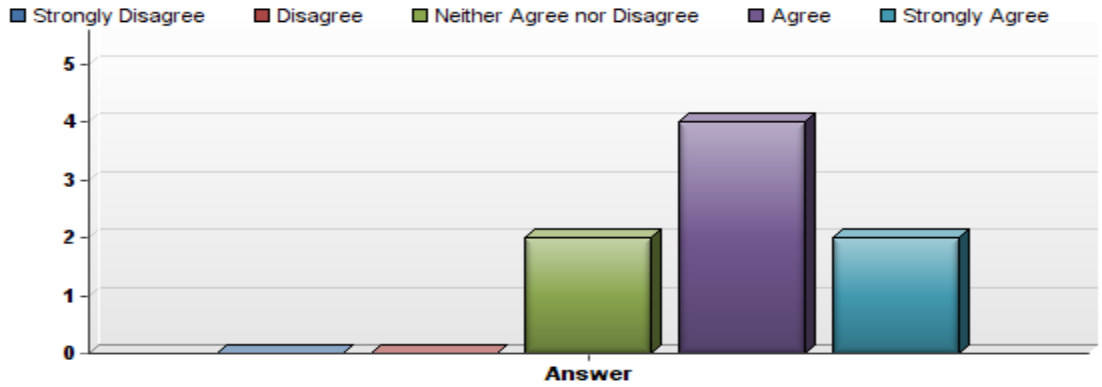
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	1	3	3	8	4.00

5. I actively participate in the innovation process in my organization.



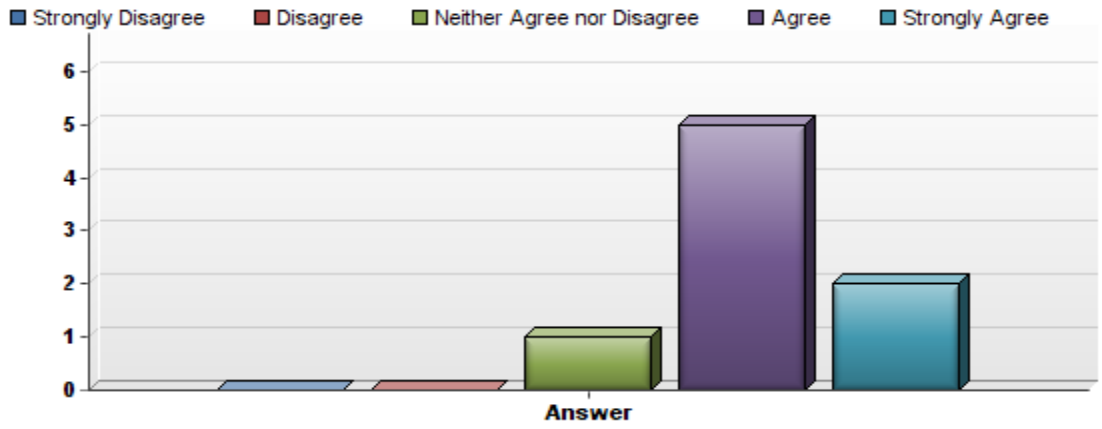
	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	0	6	1	8	3.88

6. I would like to contribute new ideas to the organization in areas that management communicates to me as strategic.



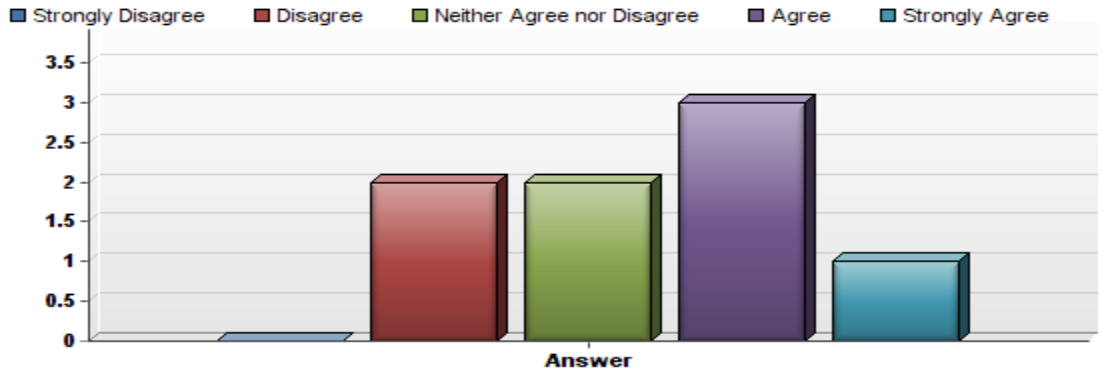
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	2	4	2	8	4.00

7. My organization employs a well defined innovation process.



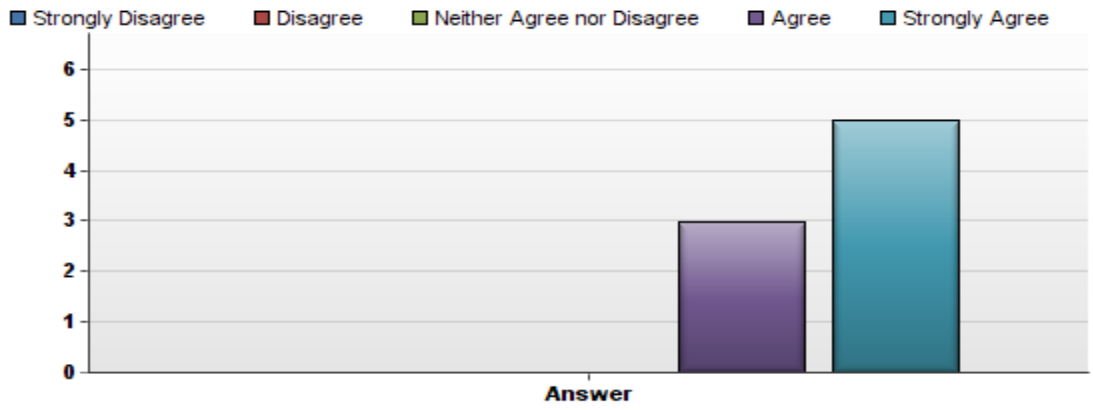
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	1	5	2	8	4.13

8. My organization uses innovation management software to manage the innovation process.



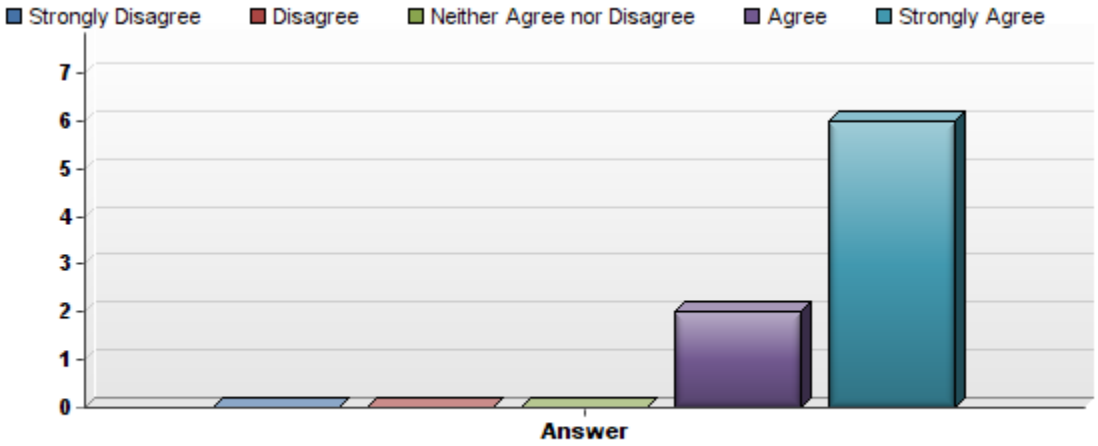
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	2	2	3	1	8	3.38

9. I would like to hear new ideas from our customers.



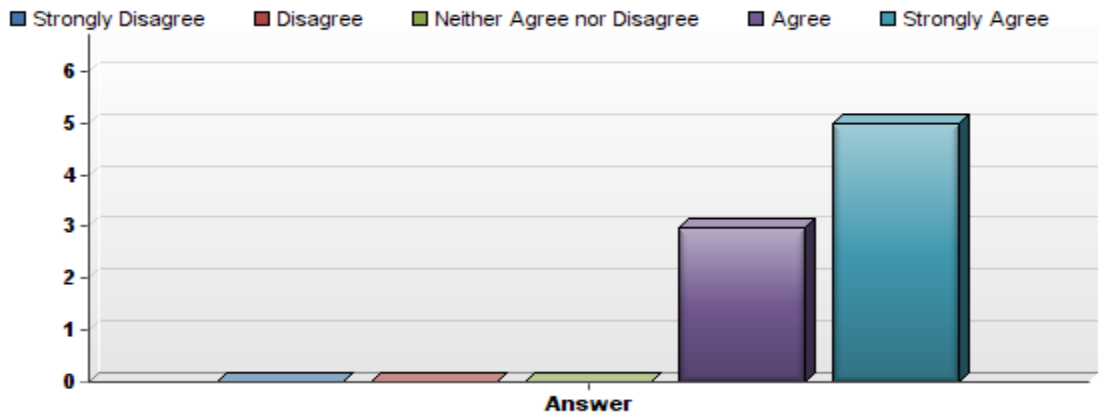
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	3	5	8	4.63

10. I would like to hear new ideas from our suppliers.



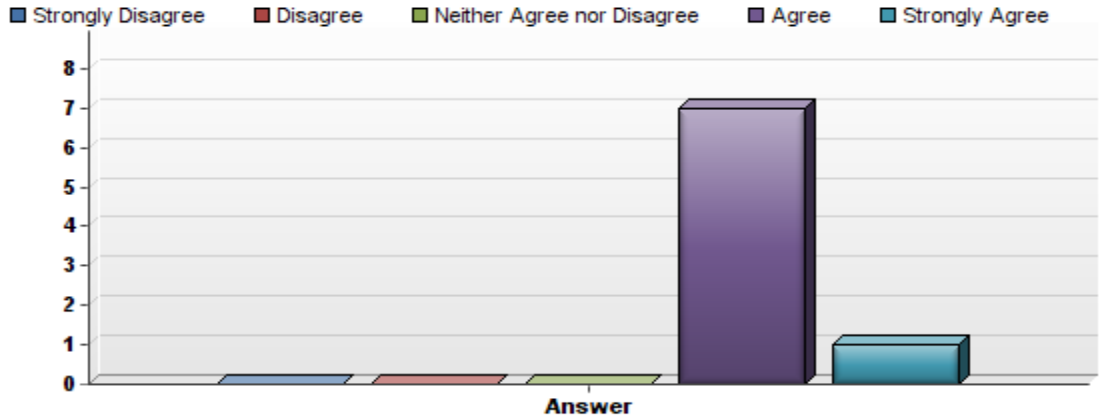
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	2	6	8	4.75

11. I would like to hear new ideas from our partners.



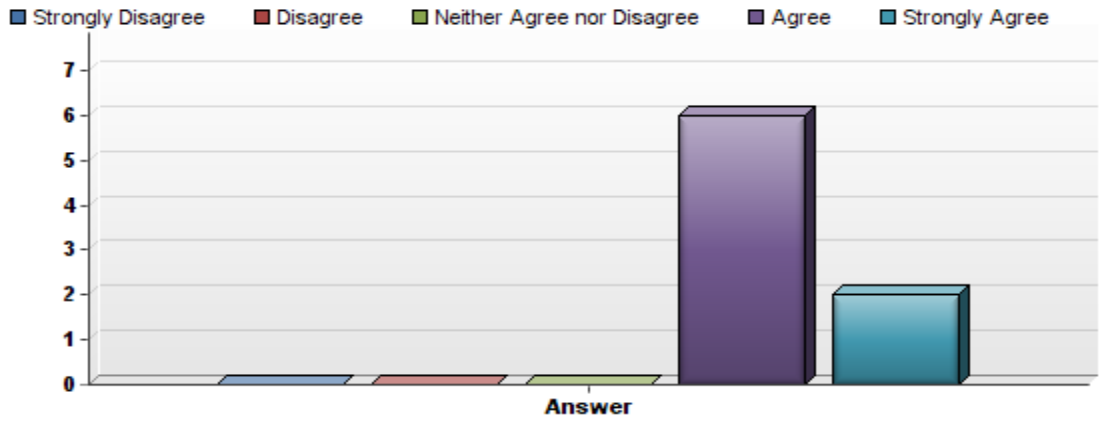
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	3	5	8	4.63

12. I would like to contribute new ideas to companies whose products and services I use.



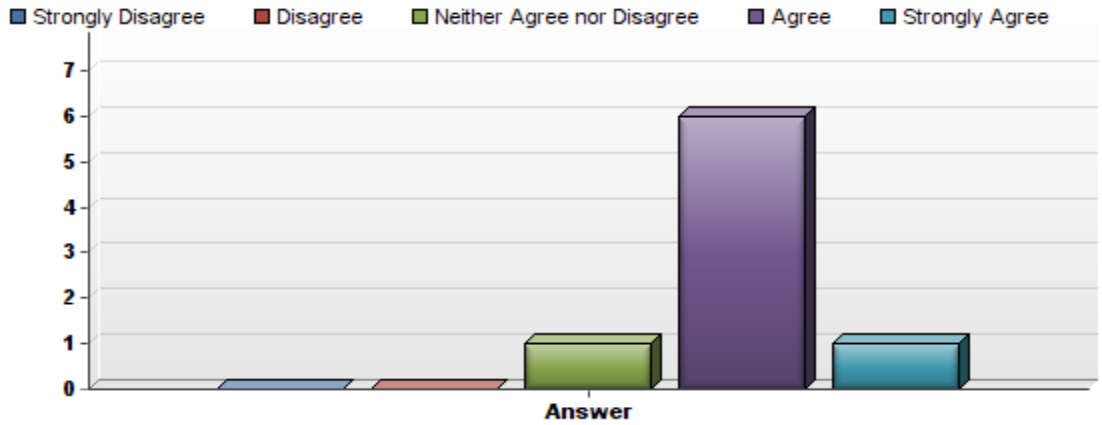
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	7	1	8	4.13

13. I would like to contribute new ideas to our clients that use our products and services.



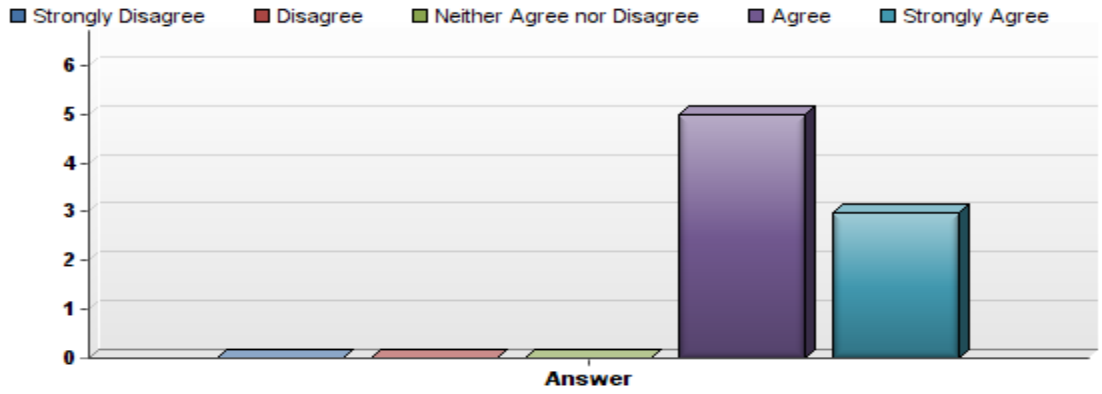
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	6	2	8	4.25

14. I would like to contribute new ideas to partners that we work with.



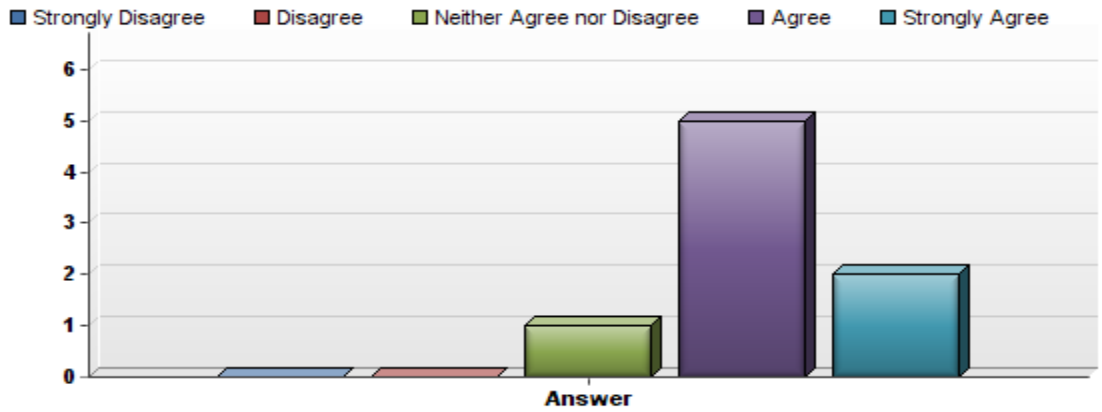
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	1	6	1	8	4.00

15. It is important to me for me to exchange ideas with my employees, customers and supplier.



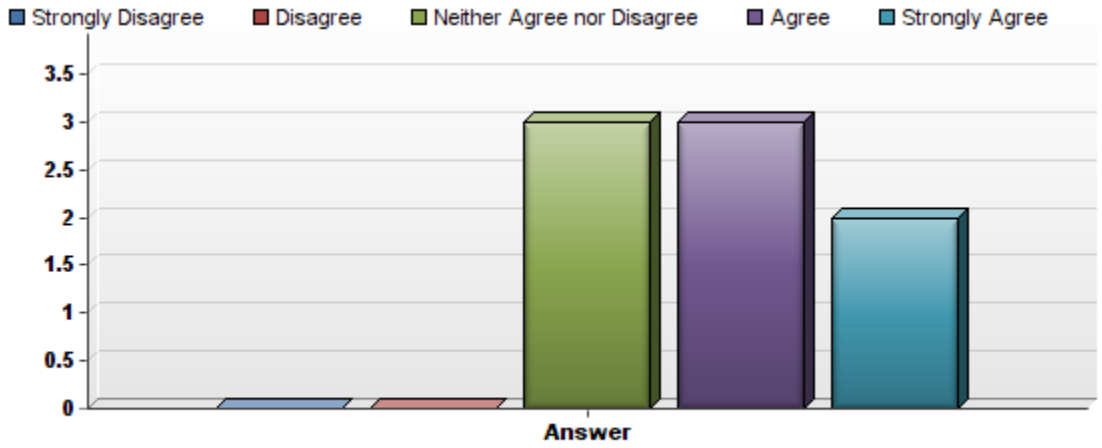
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	5	3	8	4.38

16. I would like to learn the summary of new ideas coming from my extended supply chain.



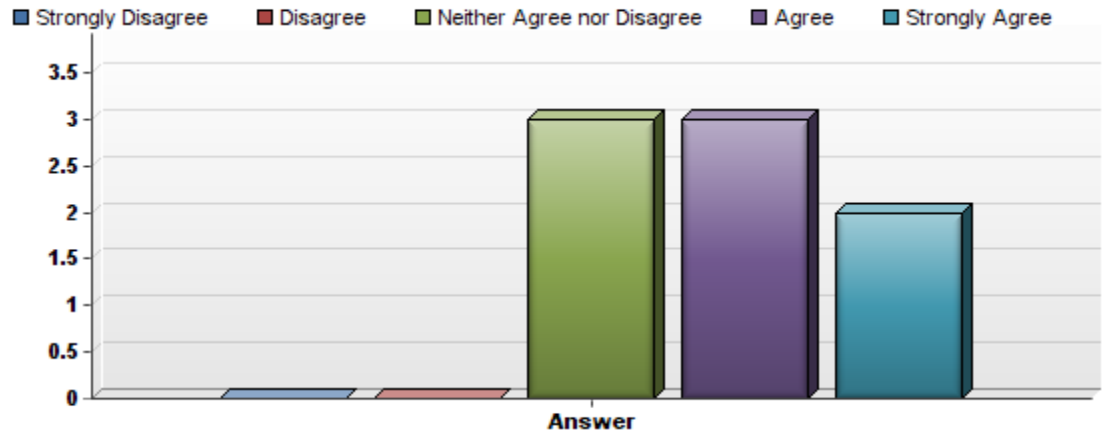
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	1	5	2	8	4.13

17. I would like to post my ideas through my mobile phone.



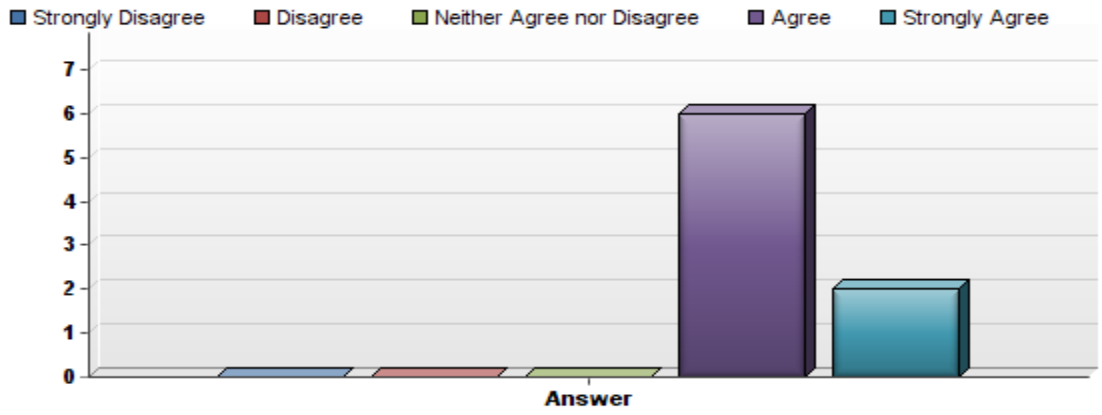
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	3	3	2	8	3.88

18. I would like to read about other's ideas through my mobile phone.



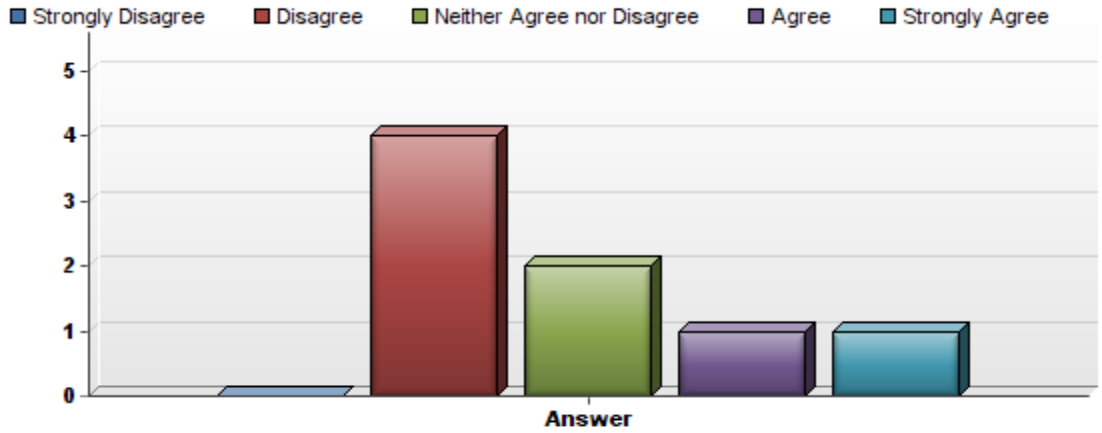
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	3	3	2	8	3.88

19. It is important for me to exchange ideas with others in real time irrespective of their location.



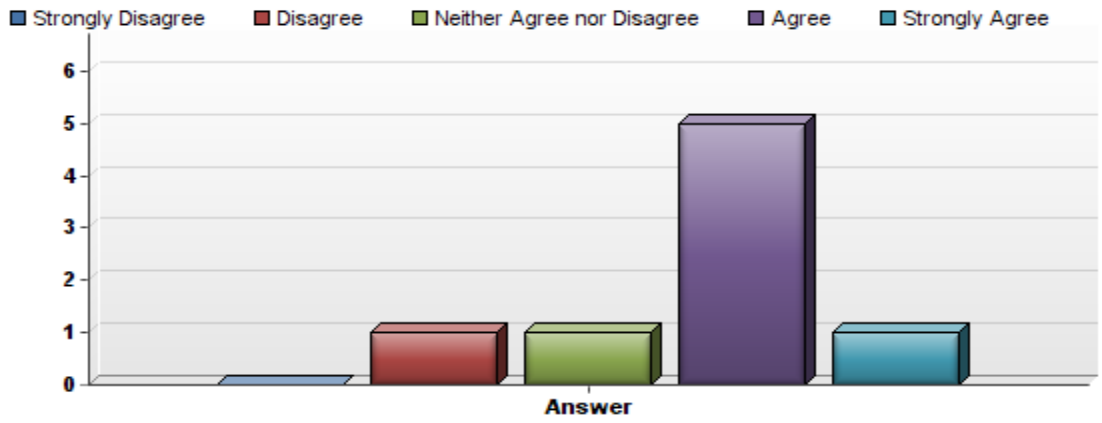
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	0	6	2	8	4.25

20. The innovation management software we use is available on mobile devices.



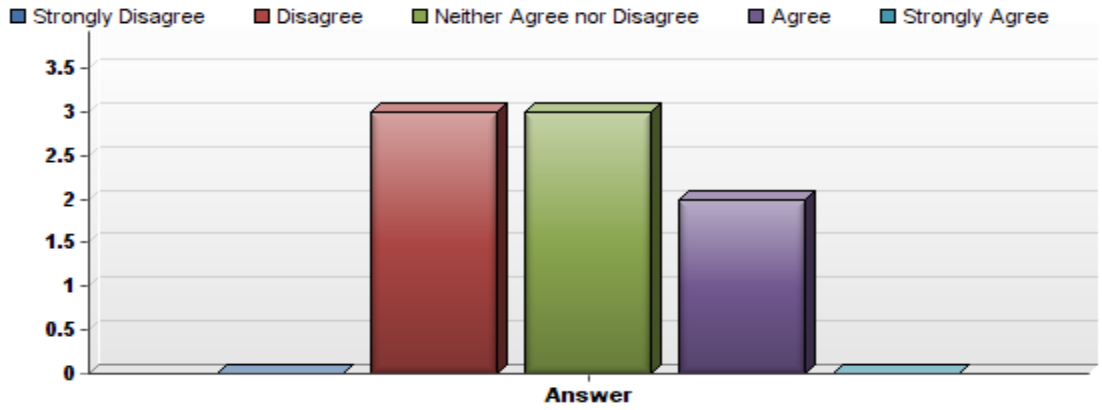
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	4	2	1	1	8	2.88

21. I would like to see the innovation management software available on my mobile devices.



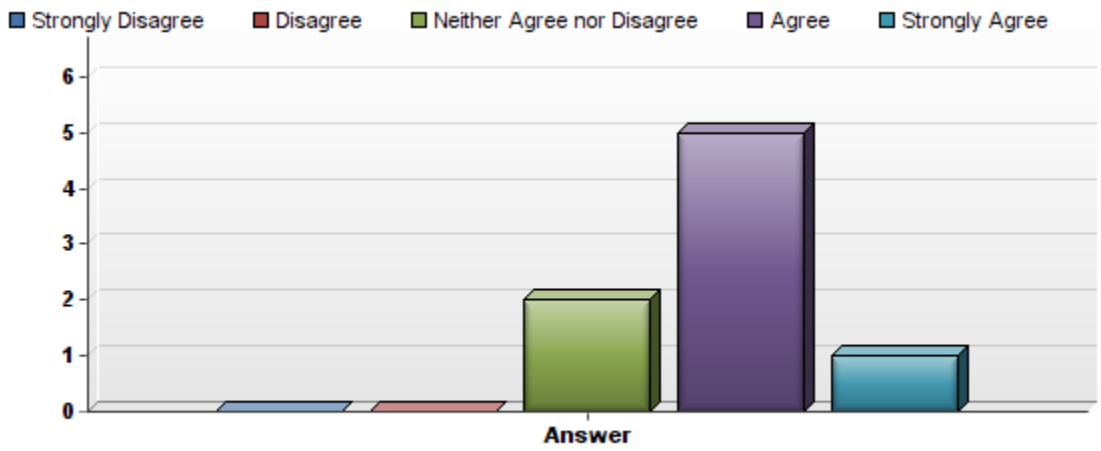
#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	1	1	5	1	8	3.75

22. The innovation management software we use connects us with our extended supply chain.



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	3	3	2	0	8	2.88

23. I would like to see the innovation management software connect me with our extended supply chain.



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Answer	0	0	2	5	1	8	3.88