The implications of 'jam' and other ideation technologies for organisational decision making

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ABSTRACT

New advances in collaborative technologies, often grouped under the umbrella term 'web 2.0', are changing the opportunity space for organisational collaboration and decision making. Research and development can now be outsourced to external self-organising communities of scientists, new business models rely wholly on content created by end users and customers are increasingly asked for input to the development of new products and services. The way in which many strategic and operational decisions are made, once the sole prevail of executive management, is being challenged by new forms of knowledge, expertise and opinion from non-management employees, and increasingly, from those outside the organisation such as customers, partners and suppliers. The widespread adoption of web 2.0 technologies and their increasing use in the business context, in other words, is creating an inevitable tension between traditional 'top-down' strategic decision-making principles and 'bottom-up', ad hoc and sometimes unstructured collaborative processes.

This paper examines recent changes to the innovation process and the advent of so-called *fifth generation innovation*, and discusses the way in which web 2.0 technologies are further evolving these models, highlighting that *ideation technologies* are an important part of the new breed of so-called innovation technologies. It then explores the particular example of *jam events*, which bring together a targeted group of participants on the web for a time-limited period to respond to a specific challenge, defined by decision-makers, with ideas, opinions and votes in a socially mediated process. The final section introduces the concept of *co-created strategy*, and discusses the factors required for an organisation to build the *absorptive capacity* needed to truly take advantage of the new knowledge created by ideation technologies.

Introduction

New advances in collaborative technologies, often grouped under the umbrella term 'web 2.0', are changing the opportunity space for organisational collaboration and decision making. Research and development can now be outsourced to external self-organising communities of scientists[1], new business models rely wholly on content created by end users[2] and customers are increasingly asked for input to the development of new products and services[3]. The way in which many strategic and operational decisions are made, once the sole prevail of executive management, is being challenged by new forms of knowledge, expertise and opinion from non-management employees, and increasingly, from those outside the organisation such as customers, partners and suppliers. The widespread adoption of web 2.0 technologies and their increasing use in the business context, in other words, is creating an inevitable tension between traditional 'top-down' strategic decision-making principles and 'bottom-up', ad hoc and sometimes unstructured collaborative processes.

This paper examines recent changes to the innovation process and the advent of so-called *fifth generation innovation*, and discusses the way in which web 2.0 technologies are further evolving these models, highlighting that *ideation technologies* are an important part of the new breed of so-called innovation technologies. It then explores the particular example of *jam events*, which bring together a targeted group of participants on the web for a time-limited period to respond to a specific challenge, defined by decision-makers, with ideas, opinions and votes in a socially mediated process. The final section introduces the concept of *co-created strategy*, and discusses the factors required for an organisation to build the *absorptive capacity* needed to truly take advantage of the new knowledge created by ideation technologies.

Evolution of innovation

It is sometimes tempting to view the contemporary popularity of the concept of innovation as merely the product of fashions and fads in the policy and business school literatures. From the perspective of economics, however, it has long been recognised that innovation is a real and powerfully generative force in the growth and development of economic systems[4]. While this has led to a substantive and illuminating body of knowledge pertaining to so-called innovation systems[5], it is now increasingly recognised that it is important to understand innovation as an organisation-level process.

This shift is being driven by a deeper recognition that organisations in the market sector face an unambiguous selection pressure to innovate as a form of competition, while also needing to co-operate with other firms and actors outside organisational boundaries, such as partners, suppliers and customers. Innovation, in other words, 'ultimately operates at the level of people, firms and networks of firms learning to do new things', and that organisations, from this perspective, 'are simultaneously competitive and cooperative systems'[6].

Focusing the lens at the level of the organisation, rather than at the level of the economic system as a whole, emphasises that innovation is a process that firms undertake, whether consciously or not. It involves decisions regarding allocation of capital, what constitutes an acceptable level of risk, setting and modifying strategic direction, and co-ordination of the internal and external resources needed to attain concrete goals[7]. All organisations have an innovation process, whether it is recognised as such or not; it can be generically defined as 'the set of activities undertaken by a firm to search for, select, develop and exploit new sources of value'[8].

At any given moment in the unfolding of economic evolution, a particular set of activities and decision-making principles will constitute so-called 'best practice' in the execution of the innovation process at the organisational level. The changes in what constitutes best practice in the innovation process have been mapped in a generational model that reflects ongoing variations in market and technological conditions, and the strategies that have emerged in response to these changes.

Five broad 'generations' of the innovation process have been identified, charting a shift from more closed, linear forms of innovation to more open, complex and network-based processes. These generations are summarised in Table 1 below.

Generation	Description
1st: Supply push	Science → Technology → Applications by firms to market
2nd: Market pull	Market demand → R&D → technology & manufacture → sales
3rd: Coupling model	Science and technology → interactions between R&D, design, operations, marketing, etc (all within the firm) → Markets
4th: Collaborative model	Science and technology → interactions between R&D, design, operations, marketing, etc (collaboration with customers, suppliers, research alliances) → Markets
5th: Strategic, integrated & open	Systematic interactions with all sources of knowledge

Table 1: Five identified generations of the innovation process at the organisational level[9]

It is not the case that all organisations with a capacity for innovation are necessarily operating at the 'frontier' represented by the fifth generation model; there are differences across sectors, geographies, size of firm and the extent to which market selection pressures are in effect[10]. However it can be said that fifth generation innovation represents current 'best practice' and is increasingly considered as a key source of competitive advantage for organisations competing in a global context[11].

Fifth generation innovation is characterised by a number of key attributes as summarised in Table 2:

Attribute of fifth generation innovation	Examples
Innovation technologies	Multi-agent simulations of new product uptake, visualisation and virtual world technologies, rapid prototyping
Business networks	Consortia and joint venture formation, social and professional networks, 'co-opetition'
Multiple sources of ideas/novelty	Increasing importance of lead users and beta testing, marketing focus on bidirectional dialogue, rise of consumer co-creation
Role of brokers	Innovation marketplaces e.g. yet2.com, nine sigma, innocentive and commercial value of brokering e.g. Innovation Xchange
Importance of flexible business models	Value realization through connecting assets and knowledge

Table 2: Key attributes of fifth generation innovation[12]

The focus here is on the first attribute of fifth generation innovation as tabled above: innovation technologies (known as IvTs). While there is a growing literature on the role and importance of these technologies in fifth generation innovation[13], the emphasis is typically on physical equipment and capital-embodied processes such as rapid prototyping, virtual simulation and computer-based modelling.

The argument being put forward here is that this emphasis misses an important class of innovation technologies related to idea generation and development; what may be called *ideation IvTs*. These mechanisms, typically embodied in some combination of software and business process, allow organisations to capture, refine, prioritise and manage ideas arising from relevant individuals or groups. There are currently several forms of ideation IvT in use by contemporary organisations, ranging from dedicated software products known as 'idea management systems', to new formats for workshops and focus groups targeted specifically at eliciting ideas from participants, to manually driven processes of search and discovery undertaken by organisations as they scan the external environment. Insofar as these mechanisms include people from outside normal organisational boundaries, these ideation IvTs can be said to be an applied form of open innovation[14], bringing external ideas and expertise into internal decision-making processes.

Ideation mechanisms as a class of innovation technologies also impact other dimensions of fifth generation innovation. Multiple sources of ideas and novelty are clearly strengthened by the use of techniques that broaden the base from which ideas are sought, and the composition of business networks may be altered at the individual level through cross-

organisational participation in ideation activities. It is thus useful to describe one particular approach to ideation – known as a *jam event* – to further unpack the implications of ideation technologies as a class of IvTs.

Overview of the jam approach
A jam is a time-limited, online collaboration event, held on the web, which allows a defined group of participants to post ideas, and discuss and vote on ideas, in response to a particular challenge or issue. The jam's focus on a specific problem or question avoids open-ended web-based discussions in which no clear outcomes are achieved. Instead, the jam process is effective because it is:

- **focused** around specific challenges - they are not simply open-ended solicitations or suggestion boxes;
- **specific** to the group invited to participate, which can include parties external to the organisation such as customers or suppliers, as well as employees;
- **scalable** beyond the limits of physical get-togethers, able to accommodate hundreds of participants; and,
- **time-limited**, typically running over a few days to a few weeks, so they do not simply become part of the everyday background of business life.

It is increasingly recognised that the standard techniques of brainstorming - asking people to attend a meeting to share their ideas in a workshop or focus group format – are severely limited in effectiveness, in terms of both the quality and number of ideas generated, and individual's experience of the process[15]. Meetings and workshops can encourage artificially quick decision-making and allow forceful personalities to dominate.

Also known as 'challenges' or 'collaboration events', jams are a form of ideation technology differentiated by the fact that they are limited in time. They provide a new form of collaboration that avoids many of the limitations of traditional face-to-face brainstorming techniques. In particular, the format allows participants to deeply engage with the challenge over an extended timeframe, avoiding the artificial time pressure that can lead to ineffective brainstorming sessions. In addition, the online format provides a neutral space in which all personality types can voice their opinion with equal impact. Finally, three distinct mechanisms of contribution or 'voice' are provided by the jam: posting new ideas, commenting on the ideas of others or simply voting to assign an idea a positive ('thumbs up') or negative ('thumbs down') response.

IBM has been a pioneer in the development of the jam approach, running regular jam-based events since 2001[16]. IBM's 'corporate values' jam, run over 72 hours in 2003, engaged around 300,000 employees who were asked to identify the new company values that reflect the modern employee's views of the world – the first time that a redefinition of IBM's core values as an organisation had been attempted in over 100 years. IBM's jam in 2006, also run over 72 hours and involving over 150,000 employees, partner and clients, was focused on identifying market opportunities from IBM's extensive technology platform. This led to $10 million being allocated to ten new business units, including a surprising capability in water technologies that had remained hidden until the jam. This business unit has now transformed into the initiative known as Big Green, IBM's strategic move into sustainability technologies and related services. IBM's most recent event, held in April 2009, was titled the Smarter Planet University Jam and involved almost 2,000 students, faculty, business leaders and governmental officials from 40 countries discussing issues and generating ideas related to themes such as smart water management, smarter healthcare, smart grid and smart cities[17].

Pfizer is another organisation that is relatively mature in its deployment of the jam or challenge-led approach to innovation. In the three years to 2008, it has run over 150 collaboration events involving both internal and external participants, as part of a broader strategy to implement a large number of small and mid-size innovation projects rather than one big, highly resourced and risky innovation initiative. Rob Spencer, Pfizer's Senior Research Fellow for Idea Management and Innovation, states

> When the business environment is known, predictable, controllable, it is appropriate to "push" resources at problems. However, when the environment is uncertain, complex, and not fully controllable, it is better to "pull" resources to problems in a just-in-time fashion. The difficulties lie in the details of such a rapid, flexible, unstructured approach …In the past three years, Pfizer Global Research & Development has run over 150 structured and documented problem-solving challenges, both inside and outside the firewall. [18]

Pfizer's challenges relate to a range of different topics including technically difficult scientific problems, solving co-ordination and implementation issues, continuous improvement opportunities and challenges specifically made to external parties, with five 'open innovation' communities (mainly comprising people from outside Pfizer) actively engaged in the

overall challenge-led process. Pfizer now maintains a small, dedicated team of around four full time equivalent staff to help identify, deploy, manage and analyse outputs from the near-continuous stream of collaborative innovation events. All of Pfizer's so-called knowledge workers (numbering approximately 30,000) are enabled to participate in challenges and event sizes range from senior management groups of around a dozen through to mass engagement events involving up to 10,000 participants.

Both IBM and Pfizer are examples of large, global corporates adopting a purposefully collaborative method for organising innovation activities around specific challenges or problems. Mid- and smaller sized organisations are also starting to experiment with the jam approach, including privately held firms limited to operations on a single continent and non-profit and academic entities with geographically dispersed stakeholders.

Regardless of the size or sector of the organisation trying out the challenge-led approach, there appear to be a small number of attributes linked to the successful execution of the process[19]. A successful jam event requires two key ingredients: (i) access to a suitable technology platform and (ii) provision of supporting services. The advent of 'cloud' or 'software-as-a-service' computing means that the technology required to support high-participation collaboration is now relatively cost effective and simple to operate[20]. The services required to design and manage a jam event as well as analyse results can be summarised as:

- Identification of the appropriate jam sponsor to ensure commitment to action as a result of the jam event;
- Engagement with the nominated jam sponsor to define the challenge in a way that will be meaningful to the participants;
- Assistance with identification of the appropriate participant group;
- Advice on selection of the appropriate event duration;
- Advice on anonymity conditions (it is possible to hold some jams with complete anonymity of all participants if required);
- Development of a communications plan and identification of appropriate social events and/or prizes, both to optimise participant engagement;
- Intervention in the jam to resolve disputes with fact-based research and/or redirect the discussion along more productive lines (in conjunction with the jam sponsor);
- Evaluation of the jam data and preparation of a 'jam results' report, including statistics on posting, voting and commenting patterns and analysis of the most popular, active and controversial ideas;

These services, along with a robust and reliable technology platform, are clearly essential to the successful execution of a single challenge or jam event. They do not, however, ensure that the outputs of such an event are translated into realistic and prioritised actions that will be incorporated into the higher-level decision making process of the organisation in question.

For most organisations, it will not be economic to create an internal capability in facilitating and managing challenge-led innovation in the manner of IBM and Pfizer. It is therefore instructive to examine the interface by which ideas and opinions from ideation mechanisms such as jam events are taken into account in broader organisational decision making.

Implications of ideas from the crowd
While many organisations maintain and continually refine a clearly-articulated strategic planning and decision-making routine, the limits of scale and availability of resources often mean that such processes in small- and mid-size organisations are under-resourced and ad hoc.

As the discussion above highlights, a collaborative method such as the jam allow employees to potentially become *co-creators of strategy,* rather than passive recipients of prescriptions broadcast from the top down. This mirrors the way in which the advent of web 2.0 technologies has allowed those in the audience to shift towards more active and engaged roles of content co-creation with regards to cultural products[21].

This shift from *received* to *co-created* strategy will eventually affect all organisations, whether small or large, and whether public or private sector. It is generally accepted that in an increasingly complex world characterised by globalisation and more intense forms of knowledge specialisation, organisations will be more productive if they can learn to tap into the knowledge, ideas and opinions of as many of their stakeholders as possible. At the same time, it is increasingly observed

that the locus of knowledge is shifting down the organisational chart – so that it is now often considered typical that the more senior one is, the less one knows compared to his subordinates.

Concurrently, the role of open innovation practices – bringing knowledge and expertise from outside the organisation to bear on internal challenges and problems – is becoming better understood and more commonly applied as a form of competition[22]. The near-ubiquity of effective access to the web now also means that the costs of engaging large numbers of people in participatory decision-making, regardless of their physical location or institutional affiliation, is falling to zero at the margin[23].

All of these dynamics suggest that any initiative to harness the co-created, socially-mediated, bottom-up world of web 2.0 can only auger well for the productivity, competitiveness and long-term performance of modern organisations.

Yet an inevitable tension remains because we are dealing with these bottom-up collaboration processes in the context of an *organisation*, in which individuals have come together voluntarily and agreed to pursue common goals. This implies that some form of leadership, management or executive decision-making will be required, if common goals are to be achieved from the plurality of individual efforts. It is this that is both potentially challenged and enhanced by collaborative approaches to decision making through ideation technologies: how does a leader or executive team make sense of and make use of the ideas, opinions and discussions – the new knowledge – generated by the jam process?

The primary recognition must be that bottom-up processes of collaboration and ideation do not negate the need for some form of strategy formation and executive decision making – while the inputs to the decision making process may have changed, the need for decisions to be taken from a strategic perspective remains. The key now is that a much richer set of inputs needs to be considered. Further, the extent to which these new inputs are truly useful will depend strongly on the framing of the initial jam question or challenge – highlighting that this is a process which requires beginning with the end in mind.

Apart from careful specification of the purpose or problem for which an ideation technology is to be used, it is imperative that a commitment to take action as a result of the process is secured up-front. Even before a jam event is held, organisational leaders must commit to responding to the ideas and opinions generated, and reporting back to the participant group on the nature of that response once the event has ended. Securing this commitment is assisted by identifying a particular individual as the 'jam sponsor' – typically the role with the greatest strategic interest in the outcomes of the event.

These two principles appear to be common success factors for ideation processes generally. They may be thought of as the basic conditions for the *absorptive capacity* required for organisations to take full advantage of the potential benefits of co-created strategy through ideation technologies[24]. It can be argued that a challenge-led, event-based ideation technology such as the jam creates a greater likelihood of achieving the absorptive capacity required in the following way:

i) Regarding the need for a strong strategic perspective to define a clearly articulated challenge, the jam provides a clear advantage over other ideation techniques because it is designed from first principles to be focused around a particular challenge, rather than the 'black hole' of a suggestion box or the open-ended conversation of a blog or community discussion;

ii) Regarding the second common success factor – the need for a commitment for action to be taken as a result of the ideation process and for this to be communicated to participants in a meaningful fashion: the advantage offered by the jam approach derives from the fact that it is time-limited; the start and end points can be used as focal points around which sponsor engagement and participant communication can be organised. In addition, the finite nature of the jam event means that different sponsors can be secured for different jams, depending on the nature of the challenge being addressed; this avoids the inappropriate assignment of one individual in taking strategic responsibility for all web 2.0 or ideation activities.

Apart from these two common success factors, it would appear that other attributes required for development of an effective interface between ideas and opinions from ideation mechanisms, on the one hand, and broader organisational decision making, on the other, are specific to the nature and context of the organisation itself.
For organisations to truly take advantage of the potential benefits of co-created strategy through ideation technologies, a number of other factors will thus need to be considered on a case-by-case basis:

- **Acceptable collaborative behaviours**: i.e. the relationship between organisational culture and structure on the one hand and the types of participation in ideation that can be expected on the other. Empirically, different jam events have generated significantly different vote-to-idea ratios, indicating that the degree to which voting (either positively or negatively) is viewed as an acceptable collaborative behaviour differs across organisations. While further research is needed to conclusively identify the group characteristics that correlate with intensive voting patterns, anecdotally it can be observed that strong voting intensity appears to be correlated with highly internally competitive groups operating within a strongly hierarchical organisation. This compares to lower vote-to-idea ratios which, empirically, are associated with more collegiate organisations (where it may be assumed that confrontation is avoided). Jams held with this style of organisation typically show that commenting, rather than voting, is favoured as a more discursive and less confrontational type of collaborative behaviour.

- **The role of controversy**: the incidence of ideas that strongly polarise opinion (i.e. with a significant number of both positive and negative votes) as opposed to ideas that are unambiguously popular (i.e. with high net scores comprised solely or mainly of positive votes). The degree to which decision-makers are willing to take up highly controversial ideas (as well as or instead of highly popular ideas) seems also related to organisational culture.

- **Playing only to win**: the 'threshold' role of prizes in incentivising overall participation vs. creating incentives to 'game' the outcome of the jam. It has been observed empirically in past jam events that participants will deploy eleventh-hour tactics (such as persuading friends or colleagues to vote in their favour) in an attempt to skew the outcome of the vote, if the prize is sufficiently large. This suggests that there is a relatively narrow 'window' of prize effectiveness – below which the incentive is too small to engender wide-spread participation, and above which the size of the potential gain may trigger perverse behaviours.

- **Jamming styles**: it appears that there may be a taxonomy of user behaviours associated with participation in ideation events. Participation styles suggested by statistical analysis of jam events held to date include:
    i) The Lurker: an individual who on average views more content than he contributes;
    ii) The Heckler: an individual who primarily comments on ideas compared to expressing a definitive idea by voting;
    iii) The Democrat: an individual who uses voting as their primary form of expression;
    iv) The Cheerleader: an individual who votes positively for more ideas than is predicted by the average voting profile for the group (potentially offset by The Naysayer who votes in the opposite direction);
    v) The Populist: an individual who (knowingly or not) generates ideas that are disproportionately popular;
    vi) The Parachuter: an individual who submits only one idea and does not comment or vote on any other;
    vii) The Provocateur: an individual who is associated with high levels of activity (in the form of both positive and negative votes as well as comments) rather than straight popularity.

It may be useful to understand the distribution of these participation styles within an organisation as ideation through jamming becomes embedded as part of the broader innovation process.

Additional research is needed to explore the specific relationships between organisational parameters, collaborative processes and ideation outcomes suggested by these observations. This further work should assist in improving understanding of how to create the most value from jams and other ideation technologies, and assessing how and where the full benefits of co-created strategy may be realised.

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[1] E.g. Proctor and Gamble's Connect + Develop, and services provided by knowledge and IP exchanges such as NineSigma and yet2.

[2] As documented for example in Burgess et al (2009) and Herz (2005).

[3] For example sites such as myStarbucksIdea and Dell's IdeaStorm. Other modern forms of customer collaboration are discussed in Prandelli, Sawhney and Verona (2008).

[4] An excellent overview is provided in Nelson (1996).

[5] For example Lundvall (1992), OECD (1997) and Nelson and Sampat (2001). Innovation systems can generically be defined as the set of institutions and actors that contribute to the creation of new knowledge and its application, including firms, universities and government agencies (Metcalfe 2007).

[6] Potts and Morrison (2009)

[7] The innovation process is thus part of the *dynamic capabilities* of the organisation; see Helfat et al (2007) and Teece (2009).

[8] Potts and Morrison (2009)

[9] Adapted from Dodgson et al (2008)

[10] Potts and Morrison (2009)

[11] Teece (2009)

[12] Adapted from Potts and Morrison (2009)

[13] For example Dodgson et al (2005)

[14] Chesbrough (2003)

[15] Duggan, W. (2007) *Strategic Intuition: The creative spark in human achievement*, Columbia University Press; Johnson, M. and Smith, H. (December 2008) *Ideation: A 21st Century Suggestion Box*, CSC World.

[16] Summarised from Bjelland and Wood (2008)

[17] IBM (2009)

[18] Spencer (2008b)

[19] This assertion is based on the author's professional experience in assisting small- and mid-sized organisations with trialling challenge-led innovation.

[20] This is especially the case as the evolution from proprietary to open source software shifts the value proposition for applications from ownership of code to effectiveness of functionality.

[21] An authoritative overview is provided in Hartley (2009), with platform-specific examples documented in Burgess et al (2009) and Herz (2005).

[22] Chesbrough (2003)

[23] Shirky (2008)

[24] Cohen and Levinthal (1989 and 1990) first put forward the concept of absorptive capacity as the ability of a firm to value, assimilate and apply new knowledge, and conjectured that the research and development function of an organisation not only provided new ideas and knowledge but also ensured that the organisation is able to take-up and make use of knowledge and ideas from outside (this argument is known as 'the two faces of R&D'). Development of analogous proxies for absorptive capacity related to knowledge created through ideation technologies requires further research.

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