Tools to Support Management Teams in Designing more Effective Innovation Systems

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Related references:


Summary

Innovation is the means by which organisations respond to their environments in order to generate both current and future value. Innovation management is, therefore, critical to ensuring the continued wellbeing of organisations but it is also an extremely complex and uncertain undertaking. While some organisations manage piece-meal innovation, most fail to sustain innovation over longer periods. This is primarily due to the inability of their management teams to design responsive innovation systems.

This research investigates how we might construct tools that support design thinking among management teams in order to facilitate designing more appropriate innovation systems.

Research Context

Innovation and its management are almost universally recognised as critical to the wellbeing of organisations. While numerous attempts have been made to impose some sort of conceptual order on these topics, they remain largely illusive to both practitioners and academics. The determinants of organisational innovation can be highly variegated even across what appears to be similar organisations and environments. This means that an innovation system that is highly effective for one organisation might well prove to be a dead weight on the performance of another.

This issue demands a change in academic approach from emphasising the role of management teams in choosing innovation systems towards designing innovation systems. Management ought to be viewed not only as an act of decision-making (i.e. thinking) involving a given set of alternatives but also as the active, ongoing shaping and designing (i.e. doing-seeing-playing) of organisational systems.

However, this goes against the grain of management research, which heretofore has been dominated by theories viewing management teams as decision-makers who use rational deduction to identify optimum solutions to well defined problems.

Taking this as our point of departure, this research provides management teams with tools that assist them in designing solutions appropriate to their own situations. Therefore, we investigate how we might design tools based on innovation models, which are external representations of the innovation systems of organisations and that can be prototyped (i.e. doing), visualised (i.e. seeing), evaluated (i.e. thinking), and tossed around (i.e. playing). These tools, therefore, offer the potential for empowering management teams to more readily: (1) understand what their innovation system is; (2) communicate the system to others; and (3) prototype, visualise, and evaluate alternative system designs.
Research Method

In undertaking this ambitious journey, the study faces up to two main challenges: (1) to arrive at a research approach for designing the tools; while at the same time (2) putting the knowledge derived from the design activity on a scientific footing. The study addresses both challenges through an adaptation of the design research paradigm.

Beginning in 2007 this study has been using an interactionist design science approach to incorporate various stakeholder (e.g. academics, domain experts, and users) interests and perspectives. These inputs are necessary in order to build and refine the tools and ultimately in order to understand and explain the utility of the resulting prototypes of the tools. To date (1) over twenty hours of face-to-face focus group sessions have been used for deep engagement with circa forty locally situated users; and (2) computer-mediated focus group sessions, facilitated by LinkedIn, were used for wider engagement with over a hundred domain experts from across the globe. In addition, a group of five expert evaluators were selected for an in-depth evaluation of the prototypes of the tools.

They were selected on account of their prior reputation, knowledge, and expertise in the areas of innovation, innovation modelling, and business modelling. The evaluation work continues to be supplemented through using the tools to model case studies involving local and global organisations.

Innovation Modelling Tools

From an early stage it became obvious that the task of designing innovation systems should not be underestimated owing to management teams’ lack of: (1) a clear conceptualisation of what innovation is; as well as a lack of (2) a shared language; and (3) a visualisation scheme – each of which is important for describing, communicating, and sharing the specifics of their innovation systems.

Development of the tools was, therefore, contingent on the delivery of three key components – a typology of knowledge activities, an ontology for innovation systems that provides the language through which innovation models can be explicaded, and a visualisation schema through which the innovation models can be visually represented – each of which is described in detail in the study.

Each of the tools consists of a base canvas, upon which the management teams work collaboratively to inscribe the local situation and in doing so move from internal individual thoughts towards a shared collective understanding of and commitment to an externalised strategy. The base canvas is printed out on a large surface so that the team can view the full canvas and the participants can collectively start sketching a model.

The elements of the model are represented using different coloured sticky notes, stickers, and markers. A participant describes an element by writing a few well-chosen words on a sticky note and then positioning the sticky note on the canvas.

The position of the sticky note identifies the element type. Colour coding is used to link elements across the canvas. The resulting models and their elements become hypotheses that management teams can test and subsequently refine.

Key Outcomes

The research approach has resulted in many versions of the tools being built and evaluated over a five year period; during which time many rich insights and justifications have been garnered from academic, practical, and empirical sources. Overall there has been a strong consensus that the tools support: (1) representation of the innovation systems of organisations; (2) communication and sharing of systems; (3) comparison of innovation across organisations; (4) measurement of innovation; and (5) informed decision making in organisations. The power of the tools originate from: (1) their highly visual nature whereby a canvas is at the centre of the activity; as well as (2) the simplicity of their use that involves positioning visual elements on the canvases. This study, thereby, contributes to the management by design perspective by being one of the first to show how tools can be built to embrace the concept of design thinking in supporting management teams designing innovation systems.

Next Steps

The research team continues to add to the suite of tools available and would welcome the opportunity of engaging with other parties interested in this area and practitioners wishing to trial the tools.