

Knowledge Exchange in Inclusive Design: the impact on innovation

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This paper describes an innovation management study that was set up to investigate knowledge exchange between new design graduates of Royal College of Art and a range of business partners on the Helen Hamlyn Research Associates Programme. This research programme has been taking commercial partners through an in-depth inclusive design process since 1999. Over this period the programme has grown substantially but evidence of its impact on the innovation processes of industry partners has remained anecdotal given the 'intangible' nature of outputs. In 2010, a short innovation management study was commissioned to collect data from senior managers in seven participating companies and their research associates – and find ways to measure 'intangible' factors. Analysis of the results revealed three key influences on business organisations: first, vision and knowledge was expanded in inclusive design; second, companies were able to use design differently as a result of being taken through a more people-centric process; and third, they were able to create new resources (such as image banks) through knowledge exchange. Opportunities were identified via the study to manage KE legacy of projects in their aftermath more effectively.

Keywords (3 max): Innovation, Management, People-centred Design

Introduction

The Helen Hamlyn Research Associates Programme at the Royal College of Art was set up by the Helen Hamlyn Centre for Design (HHCD) in 1999 to deliberately sit midway between academia and business. Graduates unconstrained by MPhil or PhD demands are paid RCA staff researchers undertaking projects directly with industry. Companies pay to collaborate with a graduate under the aegis of the HHCD, which manages the business relationships and clusters projects within key research and curatorial themes. Each project is divided into four distinct phases in line with the RCA academic year: the Discover phase (autumn term), Define (spring term), Develop (summer term) and Deliver (summer break) – see fig 1.

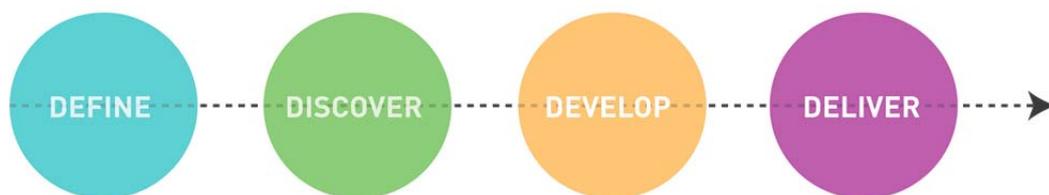


Figure 1 HHCD's current design research process which runs in four phases, Define, Discover, Develop and Deliver.

Source: Author, Pratima Kalmadi. (2011)

By 2010, more than 110 Research Associates, all new RCA graduates, had completed the programme, working with around 85 industrial partners who had invested more than £3m in collaborative projects. Evidence of KE could be found in the publications, prototypes, concepts and events that resulted from the industrial collaborations and in a wealth of anecdotal feedback from partners. But what impact did these user-centred knowledge interactions have on the innovation processes of the companies participating in the Helen Hamlyn Research Associates Programme?

What was the nature of the value that businesses extracted from this KE mechanism? And what could the RCA learn from the company feedback in terms of refining and improving the programme?

Context

Lord Kelvin (1824-1907), the leading mathematical physicist, had a famous adage: “If you cannot measure it, you cannot improve it.” Today, the issue of how to measure innovation is becoming increasingly important, as companies face a rapid change in terms of globalization, customer needs and technology. Peter Drucker (2007) mentions that every organization needs one core competence, and if that is innovation, then every organization also needs a way to record and appraise its innovation performance. But companies today are struggling with innovation measurement activities, particularly the ability to measure the qualitative ‘intangible’ factors within their own businesses.

This paper is therefore set against the context of innovation performance needing to be measured, as this is the first part of the improvement process. It explores what influence and impact an inclusive design process, as introduced via KE interactions with the HHCD Research Associates, can have on innovation performance within companies and what measures can be used to assess this in terms of value.

Performance measures are undoubtedly fraught with difficulty. The complexity of the innovation process with its uncertainties, and the need to foster creativity and risk-taking, compound the difficulties in establishing suitable metrics (Birchall et al, 2004). One of the biggest challenges faced by many companies today, is being able to understand how to go about measuring success, whether for a intangible process or a tangible output. Also innovation performance is context dependent; its exact nature depends on the organization in question (Goffin and Mitchell, 2010). Each company needs and uses innovation in a different way and to a different extent. There is some benefit in making comparisons with competitors but the individual needs and capabilities of the firm concerned are the dominant issue. Goffin and Mitchell, 2010).

There already seems to be a shift of perspective, and as the field of innovation gets wider, the issues of measurement get larger, therefore making the dependency on 'intangible' performance measures progressively larger.

Methodology

HHCD commissioned an independent analysis from an external researcher, as the thesis project for a graduating student of MA Innovation Management at Central Saint Martins College of Art and Design. The study was conducted between October 2010 and March 2011. The study aimed to generate and examine various measurement criteria, using a combination of insights from response data collected and analysis of empirical data to generate key influences and recommendations. The study began by looking closely at the HHCD and its business relationships, which was at the centre of the research project. It collected and analysed data based on in-depth interviews¹ with senior innovation managers in seven business organisations who had worked directly with the HHCD within the past two years and with the research associates themselves.

¹ The questionnaire was developed keeping in mind key criteria for the successful measurement of the influences of the HHCD process on the various innovation projects. It is crucial to note that these were based on soft criteria, since the nature of measuring a process is intangible in itself. Complex measurement systems can cloud priorities and so appropriate measures need to be selected.

The seven companies operated in a variety of international market sectors, ranging from electric cars and office furniture to healthcare and handheld devices. The oldest was founded in 1790, the newest in 1991. They also varied in size, the largest having more than 300,000 employees and the smallest with fewer than 200 staff. What they all shared, however, was an active R&D department and a focus on innovation. Statistical information on turnover, return on investment, operations and so on was combined with qualitative insights from the interviews to create data for research analysis using pre-determined measurement criteria².

The partners were predominantly larger innovation companies whose projects with the research associates at the RCA were typically small in the context of their overall operation and not widely diffused within their organisation. Therefore it was important to understand the smaller 'pin-pricks' of influence that companies take away from their KE interactions with the HHCD. Initial desk research indicated that there were very few studies conducted or models created that allowed for intangible measurement of success of an innovation process. Therefore through a process of understanding those few existing models of measurement, a Value Potential Map was developed, which aided the process of data collection. This model aimed at visualising the overall methodology that needed to be undertaken, and acted as a tool to calculate the 'innovation effectiveness' of a design process.

Value Potential Map: a tool to determine innovation effectiveness

The model³ below can be used as a tool to calculate the innovation effectiveness of a current innovation process, which can then inject value back into the company.

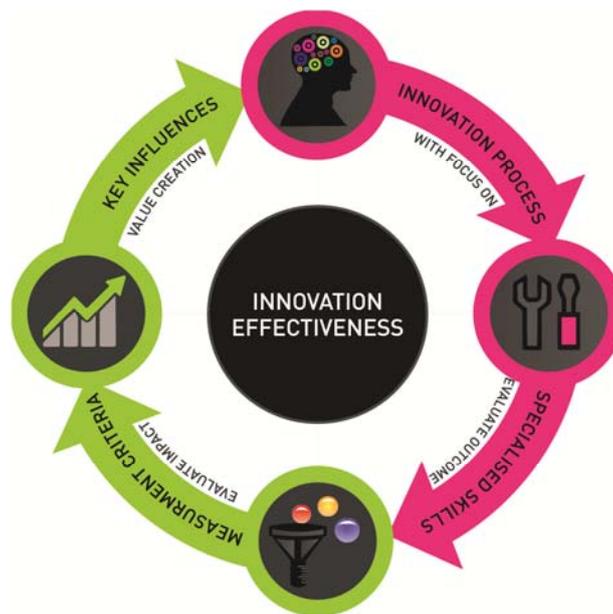


Figure 2 'Innovation Effectiveness' models that can help determine the value creation within a company.

Source: Author, Pratima Kalmadi. (2011)

² Whether a project is judged to be successful or not will depend on the business objectives, project aims and end goals defined in the brief, and the performance criteria against which success will be measured (Best 2006).

³ Figure 2 represents how in order to gauge the innovation effectiveness, it is important to start by understanding an innovation process, in this instance with a focus on a people-centered design. Then after evaluating the outcomes of the process, it leads us into setting up certain innovation measures or criteria, which then helps evaluate the impact. This then leads us to discovering the key influences this process has which then creates Value, which can be injected back into the company and its process. The right side is an indication of the information that is usually available at the time of starting such a project, and the left side is an indication of the information that needs to be gathered to complete the full cycle.

After the questionnaire and the measurement criteria were fixed, the project moved into the next stage, i.e. conducting the research to collect empirical evidence as well as collate all the data found in a cohesive and effective manner to be able to examine the qualitative insights for analysis. Further to the key influences uncovered, there was an analysis undertaken for each phase of the HHCD process (see Fig 1). This allowed for the collection of key insights, leading to recommendations to improve and enhance each stage of the HHCD's process.

Measuring intangibles

Analysis of the findings revealed how intangible performance measures can play a crucial role in being able to determine valuable intangible outcomes, and how these provide certain indications that can be more effective to determine a company's success than simply focusing on monetary tangible outcomes. Fig 3. gives an overview of some important intangible success outcomes as discovered during the project. This table provides a quick view to understand the impact of HHCD's inclusive design KE on the different research partners.

INTANGIBLE MEASURES	COMPANY A	COMPANY B	COMPANY C	COMPANY D	COMPANY E	COMPANY F	COMPANY G
Innovation Champion			✓	✓		✓	✓
Found New Markets		✓	✓			✓	✓
Found New Research Areas	✓			✓	✓	✓	✓
Expanded Knowledge	✓	✓	✓	✓	✓	✓	✓
Used Design Differently	✓	✓	✓	✓	✓	✓	✓
Found New Resources	✓		✓	✓		✓	✓
Influenced Employees				✓	✓	✓	✓
Incorporated Outcomes	✓		✓		✓	✓	✓
Lead to new Projects	✓		✓		✓	✓	

Figure 3 Overview of the 'intangible' success outcomes mapped against the seven companies interviewed.

Source: Author, Pratima Kalmadi. (2011)

Findings

There were two important sets of findings that emerged as part of the KE study, one aimed at the business interacting with the research associates and the other focusing on what the RCA and other academics could learn from the interactions with businesses.

Given the intangible nature of the measurement criteria used, it became inevitable that the findings that emerged could be considered to be 'intangible' as well. However these outcomes can be seen as a Return on Investment (ROI) for commissioning the HHCD research Associates to undertake a project.

Key Influences for Business

After evaluating all the data, three clusters of influence were uncovered:

1. **Expanding vision:** the first key influence that emerged was that of expanding vision and knowledge for the industrial partner in user-centred and inclusive design.
2. **Using design differently:** the second was that of being able to use design differently, the result of being taken through a more people-centric research process.
3. **Creating resources through knowledge transfer:** the third was that of creating resources, which is done through a collaborative knowledge transfer between the research associate, the project, the partner and the end users involved in the process.

Key insights for RCA and academics

The HHCD works on a research model where the end outcome is more often than not a proposed design concept, framework or set of recommendations (intangibles) that have emerged from their user research and findings. This model is not one of a typical product or service development where tangible outputs are expected. This therefore makes the process of measuring the success of a tangible output more difficult. However Goffin and Mitchell (2010) point out that although new product development is an important part of innovation management, it is by no means the only part.

The findings for each phase differed. The Develop and Deliver phases broadly emerged as positive experiences for the industry partners who commented that the HHCD went to great lengths to create a climate of trust and partnership. Confidence was instilled that the collaboration should not rush the process but leave things open to get innovative, unexpected outcomes. Companies felt that they were able to get valuable information quickly, which had an influence on the corporate mindset in terms of involving a broader set of users in R&D, and they commented on 'raising the bar' in terms of developing a smarter process. Once the projects were firmly underway, the partnerships appeared to flourish.

However the study also highlighted some opportunities for improvement in the way the HHCD programme runs. These chiefly related to managing expectations during the set-up of the project at the outset and managing the project legacy after the delivery phase. Innovation management is an on-going activity and KE emerging from academia-industry interactions is part of a constant process. Partners did not necessarily utilise the work immediately upon delivery but took time to absorb its meaning and understanding its practical implications. The HHCD needed to devote more resources to supporting and managing the aftermath of projects more effectively. Further, companies appeared more interested in the broad impact on their innovation thinking than on specifically feeding their new product pipeline. They wanted to learn more about and get closer to their customers.

A Missing Step: Legacy

The study identified the opportunity to create an entirely new and crucial phase of the HHCD Research Associates programme. This is Legacy, which relates to keeping in mind the future use of the research project conducted, encompassing future collaboration, follow-on work and the ability to leverage the data uncovered.

Therefore the inclusion of a Legacy stage suggested that the HHCD adapt its current design process to include:

- A series of systematic follow-ups once the project is over
- Delivering outputs in a format that more company personnel can access
- Delivering material that the key contact can use in their presentations

The Discover phase of the project emerged as less important to industry partners than the Legacy phase, which was seen as a 'missing link' in the KE chain.

Conclusion

The study looked at KE between new RCA graduates and innovation managers from seven international businesses within two important contexts – innovation management and user-centred design. HHCD is now in a position to apply its findings to adjust and amend its current KE process and throw light on the value of its 'intangible' outcomes. This was made possible by employing a framework to measure the KE that takes place between academics and businesses.

The study described in this paper provided an opportunity to set a framework within the area of innovation management, and to understand the role of 'innovation' and 'management' as two separate paradigms as well as the ability to blend together these capabilities to create solutions and strategies that can address today's current business needs.

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