



Innovation — a business risk that can be managed and mitigated

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- Innovation presents both risks as well as opportunities and those risks need to be managed in a coordinated way
- Risks exist when important innovations are not undertaken — conversely, some innovations which may never be commercialised may progress and waste resources
- Safeguards against risks include enterprise wide awareness of developments and high-level championing and assessment of ideas

According to Dr Terry Cutler, author of *Venturous Australia*, innovation spending is different to most other investments. It tends to be riskier, involve more parts of the firm, usually involves some form of collaboration with external parties and is less amenable to conventional financial and accounting indicators.¹ However, in today's challenging environment, there is a clear case for managing and mitigating the risk of innovation spending to drive competitive advantage.

While organisations' innovation activities tend to have higher risk profiles than other pursuits and require different methods for measuring value, the constant need for innovation, change and renewal are business imperatives that *cannot be ignored or avoided by any organisation* for any sustained period. In fact, the risks associated with an organisation not making changes to products, internal processes or business models over time are equally significant, leading to extinction and irrelevance if unchecked.

Whether an organisation is public or private, small or large, operating in boom conditions or tough times, the imperative to increase efficiency and produce more with fewer resources is common to all levels of management and leadership. In addition, impending skill shortages due to an ageing population and the need to mitigate and adapt to the effects of climate change are two external drivers of change that will affect most, if not all, organisations.

Given that innovation and change are inevitable, the challenge confronting leaders is how to structure their organisation's approach to innovation so that:

- emerging opportunities within the operating environment are fully exploited and maximum value for the organisation is generated, and
- exposure to risk arising from innovation activities is managed and mitigated.

Drawing on a case study derived from managing GHD's own global innovation program, reviews of the innovation practices of leading organisations and our business partners, this article addresses common issues typically faced by leaders and managers in relation to innovation. Guidance is then provided to those managing and mitigating the risks associated with the process of taking new ideas from generation to implementation or commercialisation.

Case study — GHD's global innovation program

GHD is a global engineering, architecture and environmental consulting firm with capabilities in water, energy and resources, environment, property and buildings, and transport. The services GHD typically undertakes for public and private clients include feasibility studies, detailed design, project and construction management, and management consulting in the areas of asset and risk management, stakeholder consultation and sustainability.

How 'Innovations' started

Throughout GHD's history of over 80 years, a healthy level of innovation has consistently operated in the organisation even without a dedicated innovation or research and development (R&D) department.

Acting with the support and encouragement of managers, staff have typically engaged in innovation relevant to the business ranging from R&D partnerships with universities and cooperative research centres, through to developing new services, tools and software in response to client needs and project challenges.

Having experienced considerable growth in the past decade and recognising that globalisation, competition and rapid technological changes were changing the face of professional services, it became clear GHD needed to adopt a more structured approach to generating and delivering innovation. The business issues included:

- duplication of effort
- lack of transparency
- unclear targets and determination of what represented value to the business
- inconsistent capturing of effort and outcomes, and
- insufficient communication of success and sharing of learning throughout the firm.

GHD needed to more closely align innovation with business strategy and

tighten the management of risk, ensuring that returns were commensurate with the investment required.

In response, GHD's innovation program known as 'Innovations', led by a dedicated team, was launched in March 2008 after two years of research, design and piloting. The program is underpinned by an online platform where all employees are encouraged to submit, collaborate on and vote on ideas. The program encourages the contribution of three types of ideas:

- internal ideas for improving business processes and systems
- external ideas relating to clients, the communities we work in and revenue-generating opportunities, and

Successful innovation is not just about coming up with good ideas. The real challenge lies in selecting and successfully implementing the best ideas in a timely fashion. Precautions are still taken to prevent the leakage of ideas outside the firm. Staff must formally agree to treat ideas as confidential. There must also be scope to remove patentable ideas from public view.

- strategic ideas, enabling staff to contribute to the future direction of the company.

All ideas are judged by an independent management board, the Innovation Advisory Group (IAG), in accordance with a transparent selection framework. After passing through two investment gate reviews in the ideas pipeline, the best ideas receive seed funding to enable refinement and testing, with the goal of delivery or commercialisation by the Innovations team.

Success stories

Since March 2008, over 1,400 ideas have been submitted and more than 30 ideas have received funding for further development. Just as importantly, over 4,500 collaborations have been contributed by GHD people, enhancing the firm's ability to leverage intellectual capital across geographic boundaries and 75 different technical disciplines.

Internal ideas that are progressing to implementation have the potential to save GHD approximately \$750,000 per annum. Many ideas relate to the automation of processes which can deliver significant time and cost savings.

Not surprisingly, the challenges posed by climate change have driven many of the external ideas. One project in the pipeline is a concept that could cut the energy consumption of a widely-used water treatment technology by at least 50 per cent. Based on modelling conducted on

a large Australian water treatment plant, annual energy savings to the client could be close to one million kilowatt hours per year, translating to about \$150,000 in energy costs and 1,040 tonnes of CO₂ (which would require 6,240 trees to offset). A provisional patent has been filed and proof of concept testing is scheduled for the first half of 2010.

What is particularly interesting about this new invention is that it was submitted by one of our young mechanical engineers, validating the open approach to innovation employed within the company whereby anyone, regardless of seniority and position, is able to contribute. After passing through two investment stage gates and a rigorous validation process, development funding was allocated and a team assembled, comprising commercial and technical specialists with the requisite skills to advance the concept.

The market application for this technology is global with significant potential for financial and environmental benefits. Without a structured program in place with the dedicated skills of commercialisation staff, the organisation's exposure to risk includes these possible scenarios.

- A potentially lucrative project would not have taken place due to the inventor's lack of seniority and an undeveloped network of influence within the organisation in order to secure executive championship.
- A project may have proceeded through the sheer determination of a passionate inventor, but without the input and stewardship of commercialisation staff with the skills and experience to take forward new opportunities, the chances of successful commercialisation would have been significantly decreased.

GHD has mitigated its exposure to these two risks by building a range of features into its program including:

- a tool for submitting and collaborating on innovative ideas that is accessible and visible to all staff

- a democratic, transparent decision process for evaluating ideas, removing the potential for line managers to block good ideas, and
- a team trained in change management and commercialisation that is dedicated to championing and driving innovation projects through to implementation.

Tools to facilitate ideas and collaboration

The key tool developed at GHD to facilitate idea submission and collaboration is the 'Innovation Zone', an interactive, online portal accessed by staff regardless of role or location. It enables staff to submit ideas or collaborate and vote on colleagues' ideas. Staff can receive constructive feedback on the viability of their proposal from both commercial and technical viewpoints.

One of the risks of such an open system is the 'leakage of ideas'. However, the philosophy underpinning the program is that successful innovation is not just about coming up with good ideas. The real challenge lies in selecting and successfully implementing the best ideas in a timely fashion. Precautions are still taken to prevent the leakage of ideas outside the firm. To maintain intellectual property, staff must formally agree to treat the contents of the portal as confidential and provisions are available to remove patentable ideas from public view.

Democratic and transparent decision-making

Once an idea has been submitted and received sufficient collaboration, a five-member IAG makes decisions about progression or closure. Staff have greater confidence in this type of process in contrast to a single line manager having sole decision-making power. The benefits of this approach are that it ensures a good idea is not potentially blocked for invalid reasons including the inability to value subordinates' inputs or not having the vision or skills to correctly evaluate opportunities.

GHD's IAG comprises senior managers with strong networks representing the

firm's diversity of roles, gender and geographic location. This is central to ensuring that a wide range of skills are available to evaluate ideas and that there is executive championship behind great ideas contributed by junior staff members with less influence and lower profiles.

This group's decision-making role is generally assisted by collaboration with colleagues around the organisation. The ability to vote on colleagues' ideas using the same evaluation criteria used by the IAG ensures that in the majority of situations, the best ideas become most apparent through the strong interest shown by collaborators and particularly when specialists in a particular area signal their support.

This democratic approach however, does not eliminate controversy or disagreement entirely. There have been occasions when contributors of ideas have been passionate in their expression of disappointment at not having concepts progressed. In these instances, the ability for IAG members to make themselves available to engage one-on-one and to reiterate the criteria for decision-making has ensured that employees do not become disenchanted or disengaged from the program.

A dedicated innovation and commercialisation team

Once an idea has moved through two review processes within GHD's program and has received funding to develop further, a dedicated project team is assembled comprising the requisite commercial and technical skills.

A member of GHD's Innovation team assumes the role of project manager and is charged with driving the project to delivery. Trained in innovation management and commercialisation, the project manager reports to the IAG providing recommendations for the funding or closure of projects. The objective, dispassionate voice of the project manager when compared to that of an inventor reduces the risk of over-investment in what is revealed to be a flawed concept.

Considerations for systemising innovation

For organisations looking to introduce a more structured approach to innovation or to improve the management of an existing innovation division, the following sections outline some considerations when looking to maximise return on innovation spending.

Strategic alignment

What relevance does innovation have for our business and how can we align it with our strategic objectives?

The provision of key focus areas for innovation that are firmly aligned with the organisation's strategic objectives is critically important to ensuring that a firm's scarce resources are not wasted. Further, leveraging the core competencies and strengths of the firm is critical to the process of developing new revenue generating products and services. Otherwise, the opportunity cost of innovation activities can soar.

To fully integrate innovations with GHD's business, the objectives and outcomes of the program are aligned to support the three main focus points of our corporate strategy — clients, people and performance. Accordingly, Innovations' objectives have been based on these three strategic pillars as well as the evaluation criteria at all investment gates throughout the ideas pipeline.

Sustainability, innovation and corporate strategy

For a number of GHD's clients currently in the process of either establishing or managing existing innovation programs, we have found that their objectives for adopting a systematic approach to innovation are increasingly connected to the need to support corporate sustainability objectives.

Given the dominance and profile of the impact of climate change currently within public debate and the growing responsibilities of corporations to accommodate climate change mitigation and adaptation strategies within long-term

planning activities, it is no surprise that there is a corresponding and connected awareness of the need to strengthen organisational capacity for change and innovation.

The importance of facilitating collaboration

How can an organisation's intellectual capital be leveraged more effectively to generate the solutions required to solve complex challenges?

Internal stakeholder collaboration

Another consistent theme that is emerging from discussions with GHD's clients is that business leaders are prioritising the need to better leverage their workforce's intellectual capital and to effectively transfer the years of knowledge and expertise of retiring staff to the up-and-coming business leaders.

In addition, breaking down departmental silos and increasing knowledge sharing across divisions and geographic boundaries is critical to the process of driving productivity gains within organisations.

Encouraging a freer flow of information throughout the organisation also ensures that valuable market intelligence regarding stakeholder needs and the activities of competitors reaches all relevant parties and mitigates the risk of poor decision-making due to inadequate information.

The linkage of these needs to the implementation of innovation processes and systems is that by enhancing the capacity to draw upon a diverse range of views and inputs, the organisation is better equipped to perform its business-as-usual projects as well as develop more effective solutions to the complex problems increasingly faced by firms.

One of the main tools developed to facilitate collaboration at GHD is the Innovation Zone, an online portal that enables staff to share ideas with peers and receive constructive feedback on the viability of ideas from both commercial and technical viewpoints. This might

cover how to improve an idea and available information on the strengths and weaknesses of known competing solutions. Not only does this collaborative approach assist in evaluating the viability of an idea and mitigating the risk of developing a concept that has fatal flaws, an indirect benefit is the establishment of connections between staff across geographic and departmental boundaries.

Open source innovation — collaborating beyond traditional stakeholder boundaries

Collaborating beyond the boundaries an organisation traditionally occurs in the context of working with clients, suppliers and business partners with mutual goals and complimentary skills. Commonly referred to as 'open source innovation', organisations such as BMW and Procter and Gamble (P&G) are stretching those boundaries, using tools such as the web to outsource traditional R&D functions to a global network of individuals and companies outside the organisation's business-as-usual relationships.

BMW's 'Virtual Innovation Agency' invites ideas to be submitted via its website subject to published terms and conditions and an estimated purchase price for successful ideas advertised at somewhere in the range between €500 and €60,000. Likewise at P&G's 'Connect + Develop' website, the firm's current R&D focus areas are listed, seeking submissions of solutions to those challenges.

Consistent in these types of approaches to open innovation are clear and transparent conditions involving the ownership and use of intellectual property contributed. For example, BMW clearly state on its 'Virtual Innovation Agency' submission site that where solutions submitted are not protected, proposals will be considered on the basis of and in accordance with the terms and conditions included on the site², which include terms relating to confidentiality, exclusivity and governing law.

The trust and integrity of all parties to these types of arrangements will be necessary to ensure successful and repeat

transactions but these requirements are no different to those of conventional business partnerships such as that between a client and supplier. Transparency about commercial arrangements is required for all types of business relationships, as is the need to recognise and act quickly and appropriately when there are signs of non-compliance to agreed conditions.

Having established the appropriate systems, competencies and tools internal to the organisation with the implementation of Innovations, GHD is now also looking to leverage that capability externally by establishing global communities of innovation focused upon the global market sectors of water, energy and resources, environment, property and buildings, and transportation.

GHD is currently inviting expressions of interest from organisations that have a proven commitment to innovation and are operating within these sectors to join. Our approach to this first stage of engaging externally in the practice of open innovation is very focused, when compared to the approaches of P&G, BMW and others, but this is to ensure that there is strong alignment and consistency with the objectives of both our organisation and our program.

Identifying enablers and barriers

Different organisations will face different barriers and enablers to innovation depending upon a wide range of organisational characteristics including:

- size and scale
- industry of operation and the regulatory environment
- organisational culture and leadership style
- assets, functions and capabilities required to deliver products and services and
- risk tolerance of key stakeholders such as owners, clients and business partners.

Our experience is that finding time for staff to participate in the innovation

process over and above performing their standard responsibilities is consistently rated as a prime barrier to undertaking innovation activities by our clients and business partners. Leadership support and commitment are pivotal to overcoming this. Organisations such as 3M and Google Inc have recognised policies that enable staff to dedicate a fixed percentage of their week to innovation projects. More importantly, these companies also provide support by providing skilled assistance, grants and venture funding to advance the most promising ideas.³ In this way, a culture of innovation is supported and embedded into the organisation's DNA.

A 'top down' and 'bottom up' approach is required

GHD has adopted aspects of these types of models to address the key barrier to innovation it confronts in terms of time. It is a consultancy operating on a fee-for-service business model, so the types of activities to which employees allocate their time directly affects the company's revenue and profitability, bringing staff's time utilisation into sharp focus.

Despite this pressure, creating a dynamic and creative culture in which staff have an opportunity to develop professionally by engaging in the innovation process, has been recognised by GHD's senior leadership team as a priority for the ongoing success of the company. With this in mind, staff are provided with a job code to book their time to those innovation projects that have met innovation investment criteria and have received funding to develop further.

While the reality for staff is that working on innovation projects must often take a temporary 'back seat' in priority to client needs and project deadlines, the combination of three key elements ensure that the 'no time' barrier is overcome and that momentum is maintained on innovation projects. These three elements are:

- the ability to establish and demonstrate to decision-makers that an innovation project has the potential to add significant value to the organisation and is in alignment with strategic objectives

- sustained championing of the project by one or more senior managers in addition to the generator of the idea
- a skilled team that has sufficient passion and commitment to drive the project through to delivery, led by a project manager who is ideally dedicated to working on innovation projects full-time.

If these elements are missing, it is inevitable that the project will fail to get off the ground. This is appropriate, particularly in the absence of the most important element, which is the ability to contribute significant value to the organisation.

Targets and key performance indicators

To accurately measure the return on investment on innovation, a clear definition of the value to be generated for the business from these activities must be articulated.

A definition of value is logically derived from the objectives established for innovation activities, which are not always likely to be structured purely around financial returns such as increased profitability through cost savings and revenue generation.

As a result, a broader range of 'soft' and 'hard' metrics are likely to be required to track and measure innovation's 'success' when successful outcomes encompass a range of more intangible benefits such as brand enhancement and the meeting of environmental and social objectives.

In our experience, non-financial innovation objectives for firms typically include creating an innovative and engaging workplace culture for staff in order to attract and retain the best talent. Methods to measure and track these outcomes may require including innovation related questions on annual staff surveys, in individual performance reviews and in recruitment processes.

While tracking financial objectives may be easier than the more intangible or

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indirect benefits, it will still require the establishment of systems in order to accurately and diligently track associated costs and benefits generated.

Summary

It is inconceivable that any organisation has had the luxury at any point in history of being able to ignore the pressure to change, without being subject to the high risk of suffering loss to reputation, prosperity and survival in the medium to long term. Given that the need to innovate and change is inevitable, it is sensible for an organisation to equip itself with the skills, processes and systems to manage and mitigate the risks associated with these activities.

There are many ways to approach systemising innovation in the firm and while it is impossible to provide a prescriptive, 'one size fits all' approach, there are ingredients that are common to the effective management of all innovation programs. These include:

- the provision of key focus areas to solicit ideas and collaboration that align with the organisation's strategic objectives, leverage core competencies and have the potential to contribute significant value
- the ability to capture fresh ideas and collaboration from a diverse range of sources to ensure effective evaluation and decision-making
- a transparent and efficient ideas pipeline management process with appropriate stage gates that allow for the identification and management of risk and opportunity without stifling initiative
- innovation project teams assembled and managed by dedicated personnel that are equipped with the requisite skills and have a commitment to delivering practical outcomes, and
- clear and transparent measurement of the costs and benefits associated with innovation activities so that investment made is commensurate with desired returns.

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Notes

- 1 Cutler T, 2008, *Venturous Australia, Building Strength in Innovation*, A Review of the National Innovation System, p 32
- 2 http://www.bmwgroup.com/e/nav/index.html?http://www.bmwgroup.com/e/0_0_www_bmwgroup_com/forschung_entwicklung/menschen_netzwerke/forschungskooperationen/Via/anforderungsprofil.html [11 December 2009]
- 3 Bessant J, Möslein K and Von Stamm V, 2009, 'In Search of Innovation', *The Wall Street Journal*, 22 June 2009, <http://sloanreview.mit.edu/business-insight/articles/2009/2/5123/in-search-of-innovation/> [25 January 2010] ■