White Paper: Innovation in the workplace
A multi-level approach drawn from academic research

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Executive Summary

The overall purpose of this white paper is to educate readers on the current research into what factors facilitate innovation in the workplace.

Innovation is defined as the intentional introduction and application of ideas, processes and products that are beneficial to the group, organisation and/or wider society (West & Farr). In a readily changing environment complicated by issues such as globalisation and rapid technological advancements, innovation is crucial for organisations to create and maintain a competitive advantage. Many researchers have found that adopting a multi-level approach to innovation ensures a comprehensive review of task demands that affect individual employees, work teams and the organisation as a whole (Anderson, De Dreu, & Nijstad, 2004). A review of the literature reveals the following to be the strongest predictors of innovation in the workplace:

- The individual level:
  - Role expectations for innovation
  - Autonomy
  - Job complexity

- The team level:
  - Vision
  - Managerial support for innovation
  - Effective internal and external communication
  - Positive work climate

- The organisational level:
  - Open access to technical knowledge resources
  - Managerial attitude towards change

Using empirical research findings, we offer practical recommendations for managers in the form of simple checklists. These are designed to gauge current levels of workplace innovation and encourage discussion with colleagues about: 1) which practices are important to the organisation and why; and 2) identify areas for improvement. Although resource requirements for each practice are likely to differ, research suggests that innovation must involve the assessment of all areas of business and is likely to be an extensive process that may require specialist expertise. However, top-level support and commitment to change is crucial to the success of any intervention(s) chosen by an organisation to be implemented.
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1. Defining the issue

What is innovation?

A useful way to understand innovation is to highlight how it differs when compared to a closely related term, creativity. Creativity can be defined as the ability to come up with new and useful ideas (Amabile, 1988). It is often linked with terms such as breakthrough, idea and invention and seen as synonymous with idea generation. Innovation can be seen as a step up from creativity in that it ensures creative ideas come to fruition (i.e. idea implementation). Adopt this view and creativity becomes an initial ‘generative’ phase in the overall innovation process.

Drawn from psychological research, a more narrow definition of innovation is that it is the intentional production and application of ideas, products or processes, new to the relevant unit of adoption, and designed to specifically benefit the individual, group, organisation or wider society (West & Farr, 1990). Based on this definition, four criteria can be established for true innovation:

**Application** As it is briefly mentioned above, innovation must involve an application of ideas in the form of either products (inputs and outputs) or processes.

**Intentionality** Innovations must be purposeful. This implies that innovation excludes those ideas, products or processes which occur by accident.

**Externalised benefit** The perceived benefit of innovation must extend beyond the individual and be seen as adding value to a group, organisation or society. The implication of this is that individuals who are in a position to ‘innovate’ are almost forced to consider external perspectives.
Relative novelty  Whether the idea, product or process in question is absolutely new is less relevant relative to its benefit. The implication of this is that what is seen as tried and tested in one function/organisation, can be innovative in a different function/organisation.

Why is innovation important?

Innovation is commonly regarded as essential to the survival, success and growth of organisations. Some even believe it to be the most important determinant of a firm’s performance (Mone, McKinley, & Barker III, 1998). Innovation is at the heart of not only creating value, but also sustaining a competitive advantage. Whether it is a small firm finding ways to introduce a new product to the market, or a government department trying to develop new ways to meet the needs of its community, innovation is important albeit in varying degree to all types of organisations. Innovation is also important in that it enables organisations to operate effectively in and identify, respond and adapt to rapid changes in the business environment. These changes include but are not limited to globalisation, rapid technological advancements, financial crises, job restructuring and divergent customer needs and expectations. Ensuring these actions are carried out effectively is traditionally viewed by many as the sole responsibility of product development and R&D.

However, increasing competition and the benefits of cross-functional participation have meant that this responsibility is now more than ever, shared by all business functions. The definition of innovation offered earlier stems from this notion in that products for end users (e.g. produced by product development, R&D, marketing) as well as innovative processes (e.g. produced by human resource management, operations, finance) are included. Hence, the challenge for organisations today is to find ways to support and develop an innovative workforce across all business functions and at different levels – the
individual, the team or workgroup and the organisation. Reviewing the existing research on innovation offers insight into this area for managers by identifying what factors are empirically linked to innovation in the workplace – the topic of the next section in this document.
2. Facilitators of innovation

Where did innovation research emerge from?

Innovation research first emerged in the 1940s from studying how individuals decide to adopt new ideas (Van de Ven & Rogers, 1988). Over the next few decades, research focused on investigating innovation in the organisational context (Zaltman, Duncan, & Holbek, 1973) moving away from whether innovation is adopted (i.e. deciding to use the innovation) towards whether innovation is implemented (i.e. putting the innovation to use). This represents an important milestone in the innovation research as it called for a multi-level analysis by researchers of factors that facilitate innovation beyond just the individual. Anderson and his colleagues (2004) outline these levels as follows: 1) the individual; 2) the workgroup; 3) the organisation. By adopting this approach to innovation, the aim for many researchers became understanding why so many innovative ideas fall by the wayside (Damanpour, 1991).

The remainder of this section will summarise the innovation research and identify what factors have been empirically associated with innovation at the three levels mentioned above. At each level, a meta-analysis will be used as evidence from the innovation research, respectively. Meta-analyses are quantitative summaries of research findings (Anderson, et. al., 2004) aimed at consolidating and drawing somewhat accurate conclusions about a particular body of knowledge (Schmidt, Pearlman, Hunter, & Hirsch, 1985). Meta-analyses are useful as they help to overcome any inconsistent findings and methodological weaknesses such as small study sample sizes (Schmidt et. al., 1985). In saying this, one criticism of meta-analyses is that they are only as good as the studies that are included (Smith & Glass, 1977). However, as with the meta-analyses used in this section, an openly
specified and strict criteria for the inclusion of studies aids in counteracting this issue (Fiske, 1983). The research evidence discussed next will be used in the subsequent section of this white paper, aimed at helping managers put this research evidence into practice.

The individual level

A recent meta-analysis looked at the relative contributions of different factors to individual-level innovation (Hammond, Neff, Farr, Schwall, & Zhao, 2011). As seen in Figure 1 below, Hammond and her colleagues (2011) divided these factors into four groups: 1) job characteristics; 2) motivation; 3) individual differences; 4) work context. The authors posited that these factors would have different effects on the innovation process. The major findings from their work are as follows:

1) **Job characteristics**: Employee expectations that their role will involve innovative behaviour, job complexity and autonomy were the strongest predictor category of individual innovation.

2) **Motivation**: Intrinsic motivation (related to the individual’s engagement on the task) had a stronger relationship with individual innovation than extrinsic motivation (related to external factors such as compensation).

3) **Individual differences**: Education and tenure were inconsistently associated with employee innovation.

4) **Work context**: A general positive climate, resource availability, supervisor support for innovation, leader-member exchange quality showed moderate positive associations with individual innovation.
Figure 1. A current model of the antecedents of individual-level innovation

(Hammond et. al., 2011).

The workgroup level

Within organisations, it is likely that creative ideas are implemented in work groups (Reiter-Palmon, 2011). Thus, it is important to identify any influences unique to team settings that affect the innovation process. A meta-analysis of studies into team innovation conducted in the last three decades analysed the relative contributions of different predictors at this level (Hulsheger, Anderson, & Salgado, 2009). The authors divided these predictors into two categories: 1) team input variables (related to the composition and structure); 2) team process variables (related to internal and external interactions). The findings from this review suggest the following:

1) **Team input**: Teams which have greater external and internal communication, a strong vision, leader support for innovation, task orientation and are cohesive are likely to have greater levels of team innovation. Of the factors related to team input, having a shared, interdependent goal had the strongest association with team innovation.
2) **Team process**: Factors related to how a team is composed and structured (team input variables) are significantly linked with team innovation but to a weaker extent compared to the team process factors mentioned above. The more diverse the members of a team are, the less likely they are to be innovative as a group (though this association is weak). However, the more diverse the jobs of team members are, the more likely they are to be innovative as a team (again, a weak association).

**The organisational level**

To date, only two meta-analyses have investigated factors associated with innovation at the organisational level. The first review conducted nearly two decades ago looked at factors related to the structure, strategy, resources and culture of an organisation (Damanpour, 1991). The second review conducted less than a decade ago looked specifically at how the number of employees in an organisation is related to organisational innovation (Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, & Boronat-Navarro, 2004). The combined findings of these two reviews are as follows:

- A greater variety of specialists, functional differentiation, professionalism, managerial attitude toward change, technical knowledge resources and external and internal communication were found to be positively associated with organisational innovation.
- The more centralised an organisation is, the less likely it is to be innovative.
- The larger the organisation, the more likely they are to be innovative.
3. Recommendations for managers

A brief comment

A simple and useful way inform managers on how to apply the research evidence discussed in the previous section is by using checklists. As indicated by our use of a multi-level approach, innovation is a complex issue. However, checklists aid managers to: 1) ensure that the basics are covered; 2) look for areas of improvement; and 3) engage in open discussion with fellow colleagues about the relative importance of such findings to their organisation. Since managers differ in their level of authority and control, three checklists will be offered at the three levels of analysis discussed in the section prior. Those items which are not checked highlight areas that may require further improvement and discussion amongst decision-makers.

Checklist 1: Employee innovation

☐ Do your employees expect their job to involve engaging in innovative behaviours regardless of their position?

☐ Do your employees perceive their job to be challenging, requiring them to focus on multiple aspects at any one time?

☐ Do your employees have some degree of freedom over how, when and where they complete their work?

☐ Do your managers support employees to be innovative and encourage them to come up with suggestions for new and different ways of doing things?

☐ Do your managers make as many resources possible available to employees to be innovative?
☐ Do your managers foster a positive climate in the workplace that is participative, open, safe and error-friendly?

☐ Does having a highly engaged workforce an important goal for your organisation?

Checklist 2: Team innovation

☐ Are teams provided with clear, shared and visionary goals?

☐ Are teams provided with norms for high innovation?

☐ Is communication both within and between teams and departments easy and effective?

☐ Do systems exist to monitor and criticise creative ideas in a safe and encouraging manner?

☐ Do performance management systems exist that provide feedback and incentive for shared team goals as well as personal goals?

Checklist 3: Organisational innovation

☐ Is participative decision-making is encouraged in the workplace?

☐ Does a formal system exist for cross-functional participation?

☐ Do your managers support useful change and encourage subordinates to adopt this view too?

☐ Are technical knowledge resources easily accessible and made readily available to most employees?

Evaluation

Innovation can be measured by the number of suggestions generated by employees/teams/organisations that are eventually implemented in some way in the workplace, questionnaires (e.g. Innovative Behaviour Measure, Scott & Bruce, 1994) and
supervisory ratings. These innovations can be tied to financial measures of performance (e.g. Return On Investment - ROI) to evaluate their effectiveness.

Resource requirements

The checklists displayed above serve as a simple way to gauge the current levels of evidence-based practice associated with multi-level innovation. Some organisations may need small changes whereas others may require a large overhaul. Thus, resource requirements are likely to differ in this respect. However, since specific job characteristics were found to be strongly associated with employee innovation, it may prove useful for organisations to initially begin with a job analysis and subsequent redesign if necessary. This may include conducting on-the-job observations, interviews with subject matter experts and questionnaires (particularly with larger organisations). These methods are likely to be time-consuming and may require outsourcing. Training programs for managers may also prove useful. However, these may be very expensive. The details of interventions like this lie beyond the scope of this document. The message for readers is that evaluating, implementing and monitoring practices that foster innovation involves all areas of business and not just one function, usually R&D. Whatever practices discussed in this document are deemed suitable for the organisation, strong managerial commitment and support for change is critical to its long-term success.
References


