The proven payoff of knowledge management tools

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Many firms involved in collaborative projects are quick to adopt the latest and greatest knowledge management tools. But what value do they have besides being new and exciting?

With so much emphasis placed on technology, the expectation is that organizations will be as tech-savvy as possible. This has prompted organizations to adopt countless varieties of information and communication technologies (ICTs). While the benefits may be undeniable, little research exists showing the exact relationship between ICTs and firm performance.

In the article, "Knowledge Management Tools, Inter-organizational Relationships, Innovation and Firm Performance," Antonino Vaccaro (IESE), Ronaldo Parente (Rutgers School of Business) and Francisco M. Veloso (Carnegie Mellon) examine how ICTs — and knowledge management tools (KMTs) in particular — impact the financial performance of key business units in the realm of automotive suppliers.

What are KMTs?

KMTs are ICT applications that manage organizational knowledge, facilitating knowledge exchange and strengthening knowledge quality.

In the automotive sector, they are of vital importance for collaborative, inter-firm R&D projects. Particular emphasis here is placed on electronic databases and standardized data transfer systems.

Research has suggested that such KMTs have a direct impact on the financial performance of

firms, by securing efficient knowledge-based processes and reducing costs. They also have an indirect impact, by improving innovation aspects such as product performance and speed to market. But what effect do innovation-related variables have on financial outcomes?

Testing four variables

There are four variables with the potential to affect KMT use and outcomes within business units: culture for change, naturalness in virtual-tool usage (as a substitution for face-to-face contact), previous collaborative experience and mutual trust.

Some hypothesize that higher levels of these four variables will increase reliance on KMTs. This, in turn, will strengthen financial performance, new product performance and speed to market, which will subsequently improve financial performance.

Not all of these hypotheses are borne out by the authors' research. The authors distributed a questionnaire to key players in inter-firm R&D projects — specifically, between first- and second-tier suppliers — in the Brazilian automotive sector.

Of the four variables, only collaborative experience and naturalness in using virtual tools significantly impacted reliance on KMTs. KMT reliance does indeed positively affect new product performance, speed to market and financial performance.

While it is perhaps not surprising that great product performance positively impacts financial performance, the results also show that speed to market does not have such an impact.

This last result may be explained by the fact that automotive product development has a lead time of five-plus years. In addition, automotive suppliers must adhere to strict contractual agreements, which give great weight to clients' timing expectations. For that reason, faster R&D teams may not see rewards like they might see elsewhere.

Takeaways for business leaders

Among the most important lessons are the key roles that naturalness in virtual-tool usage and collaborative experience play in ICT adoption and usage.

Even more important is the clearly proven impact that KMT usage has on financial performance.

Leaders wondering whether to increase their KMT reliance should hesitate no longer, now

that they can see that KMT-reliance levels are directly associated with higher financial performance, new product performance and faster innovation or speed to market.

The lack of significant impact of mutual trust and culture of change on KMT reliance warrants a bit more commentary, since many other studies have extolled the effects of both on KMT adoption and usage. Much research has suggested that a lack of trust among individuals who interact via ICTs can reduce the effectiveness of virtual knowledge-based exchanges.

This study, however, points out that ICTs are often the only source of information available to stakeholders in inter-firm projects, which are frequently geographically dispersed. Since KMTs are absolutely essential in these projects, the trust variable does not impact reliance on them.

Regarding culture of change, some studies have suggested that an organizational-level lack of such may inhibit the adoption of KMTs. This study, however, reveals that R&D groups do not actually see KMTs as novel technologies: adoption and usage are simply expected as par for the course, whether a culture of change exists or not.

Indeed, it is interesting and important to distinguish between ICT tools that are considered "novel" and those that individuals and organizations have already embraced.

Inter-firm R&D projects face many challenges, not least the temporal and geographical distances between the stakeholders. This study clearly shows that ICTs can help overcome such distances, playing an undeniable role in positively influencing the financial performance of business units.

Leaders of inter-firm R&D projects would do well to adopt KMTs to improve knowledge-based exchanges, while closely monitoring the conditions that facilitate the usage of KMTs.

Also, they should carefully consider personnel selection, favoring those candidates who have collaborative experience and naturalness in virtual-technology usage.

With these practices in mind, project leaders — and firm leaders, too — will see the payoff that KMTs have to offer.