



Using collaboration to enable the innovators in your organization.

Part of the CIO implications series

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Introduction

More than ever, CIOs are being asked to contribute actively to business growth, competitive differentiation and innovation. With its central role in the organization, IT has the power to drive new levels of productivity; enable novel, forward-thinking business models; and allow people to communicate with increasing speed and convenience across long distances. In the "CEOs are expanding the innovation horizon: important implications for CIOs," paper, IBM discusses the top three priorities that CIOs must address when constructing an IT strategy that supports enterprisewide innovation goals. These three priorities are:

- *Business model innovation—Changing the way the organization is run to achieve competitive differentiation (customer-centric, creating new value)*
- *Collaboration—Creating an environment and infrastructure that encourage knowledge and information sharing across the extended enterprise (employees, partners and customers)*
- *Integration between IT and business—Combining technology expertise with business and marketing insight to achieve business objectives.*

This white paper discusses the CIO's role in enabling innovation through collaboration and provides recommendations for constructing a thorough, effective collaboration strategy.

Highlights

Collaboration is one of the most critical capabilities IT can provide.

Companies that support extensive collaboration tend to outperform their peers, achieving greater gains in revenue growth, operating margins, productivity and customer satisfaction.

Collaboration's central role in innovation and business success

For the past half century, the business world has watched IT take on an increasingly central role in practically every organization – slowly at first, but with stunning speed and ubiquity in recent years. Nearly all organizations, across industries and around the world, now rely on IT for the operation of fundamental business processes.

Among the most critical capabilities that IT provides is collaboration. Whether e-mail, instant messaging, wireless connectivity, virtual workspaces or video-conferencing, technology dramatically shortens distances between people and frees up the flow of intellectual capital, enabling employees to work and respond much more quickly. In the “IBM Global CEO Study 2006” survey, 75 percent of respondents ranked collaboration as a “very important” part of innovation – and of business success in general. The study found that extensive collaborators tended to outperform their peers in key business performance indicators such as revenue growth and operating margins. What's more, companies collaborating with external sources reported higher revenue growth, on the whole, than companies not collaborating with external parties.

IBM's findings are not unusual. A survey performed by Frost & Sullivan¹ measures the effects of collaboration capabilities and collaboration quality on key performance indicators through what the firm calls a “collaboration index.” The study finds that collaboration has a stronger correlation with overall business performance – including innovation, productivity, customer satisfaction and profitability – than does strategy orientation or market turbulence.

Highlights

By enabling employees to collaborate effectively, organizations can drive innovation from the ground up.

Collaboration should extend beyond the enterprise's four walls, encompassing partners, customers, consultants, competitors, associations and academic groups.

Independent collaborative communities hold unparalleled power to set industry standards and solve business, technological, scientific and societal issues.

By sharing information across separate lines of business, employees naturally tend to drive business innovation from the ground up. These activities can be a powerful source of insight and action – and many organizations already benefit from a more connected, informed and flexible workforce.

Collaboration should extend beyond the traditional enterprise as well. An increasing number of business leaders now reach out to partners and to customers – important players who can and should influence strategic direction. In fact, the “IBM Global CEO Study 2006” survey shows a correlation between revenue growth and external collaboration – with partners, customers, consultants, competitors, associations and academic groups.

One can find numerous examples of independent collaborative communities that set standards for entire industries or work together to address business, technological, scientific or societal issues. The Mozilla project (mozilla.org), for example, is an open-source development community that aims to “preserve choice and innovation on the Internet.” It has formed partnerships with several large technology firms, including IBM, Sun Microsystems, Hewlett-Packard, Red Hat and Linspire. The World Community Grid, as another example, combines resources from idle machines around the world into a centralized grid that can be used for complex computational problems. It has already been put to use for the SETI@home and GENOME@home projects. Wikipedia has accumulated a massive database of knowledge, all submitted and modified by collaborators, who, in any other context, would be completely unrelated. In these cases and many others, the potential for progress is practically unbounded.

Highlights

Using collaboration effectively can be a complex and daunting task, with obstacles that range from cultural boundaries to rigid IT infrastructures.

Organizations must take a methodical, granular approach to collaboration and innovation.

To account for organizational and technological complexity, the CIO should address four main dimensions of the organization.

The importance of developing a focused strategy

Nearly every organization recognizes the promise of driving innovation with technology-enabled collaboration. Yet, of the 765 business leaders interviewed in the “IBM Global CEO Study 2006” survey, only half viewed their current collaboration capabilities as better than moderate. Many organizations are limited by cultural boundaries, lack of relationship-building skills, proprietary IT architectures, insufficient capacity or scalability, incompatible data types and stringent security requirements. With so many obstacles to overcome, using collaboration effectively can be a complex and daunting task. Undirected efforts to establish collaboration in an organization can easily backfire, diluting investments and distracting focus from established business processes.

That is why it is important to take a methodical, granular approach to collaboration and innovation. Collaboration initiatives should be anchored in top-level business objectives, with careful consideration of risk profiles and tolerance levels across the enterprise. And the collaboration strategy should be created and guided centrally—by an executive who is in a position to interact with and support each area of the business: the CIO. Because of the position’s control over key collaboration technologies, the CIO’s contribution to innovation strategy development is indispensable.

To link IT-related collaboration initiatives to bigger business goals, the CIO should set a thorough, measurable strategy that addresses the complexities of the extended enterprise. There are four dimensions that must be addressed in any collaboration strategy:

- *Segmentation model*
- *Assessment*
- *Metrics*
- *A plan that addresses culture, technology, services and the extended enterprise.*

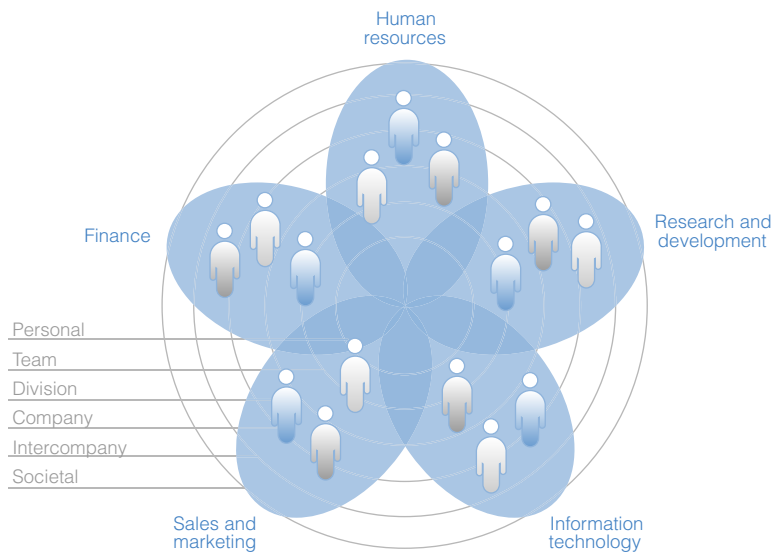
Highlights

Failing to understand variations and interdependencies across the enterprise can cause confusion and conflict.

Start with a segmentation model

Collaboration practices and requirements can vary widely across the enterprise. Divergent business priorities, security concerns and existing technologies in different areas can cause confusion and conflict, especially when these variables are ignored in the overall collaboration strategy. Without an understanding of how participants work together to innovate, the CIO will find it difficult – and ultimately futile – to apply collaboration tools and processes.

One way to obtain a comprehensive view of the variations and interdependencies is to develop a segmentation model that examines the ways in which contributors participate and interact across the enterprise. The following segmentation model draws distinctions among classes of innovators, business segments and activity domains.



Activity domains Examples of business segments Consumers Dreamers Implementers
Types of innovators

Highlights

Individuals play different roles when contributing to innovation: dreamers, implementers and consumers.

Each collaborator falls under a certain business segment, whether it's human resources, finance or research and development.

One of the most important factors to capture in a segmentation model is the role that an individual plays when contributing to innovation. To understand the different innovator roles, it helps to first identify the stages implicit in the innovation process: the conception of the idea, the implementation of the idea and the utilization of the idea in a practical setting. Innovation can fail if any one of these stages falls through. There are likewise three classes of innovative collaborators. Dreamers collaborate to conceive and refine an idea. Implementers collaborate to bring the idea to fruition. Consumers collaborate to use the idea in such a way that it generates value; they also ultimately rate its relevance. Each class of innovators requires its own collaboration mechanisms. It is important to recognize that these classes of collaborators often fail to collaborate with one another effectively because of inherent discrepancies in viewpoints and tools. The first step in addressing those barriers is identifying the contextual boundaries between these groups of collaborators.

Whether a dreamer, an implementer or a consumer, these collaborators belong to a particular business segment—a distinct area of the company, such as human resources (HR), finance, or research and development (R&D). Because each business segment is responsible for its own set of functions within the organization, it will have unique collaboration requirements. For example, the salesforce probably needs real-time, mobile connectivity with colleagues, partners and customers to drive innovation. The product development department, on the other hand, may need a mechanism that allows open feedback from consumers, as well as central repositories for specifications that can be shared with marketing teams, R&D and other areas of the business.

Highlights

Individuals participate in collaborative activities on a variety of levels, or activity domains, using different tools and processes for each.

A collaboration strategy should take into account the needs of each group—and work to remove barriers between the groups.

Furthermore, within every business segment, individuals participate in collaborative activities on a variety of levels. These levels, or activity domains, typically fall into six categories: personal, team, division, company, inter-company and societal. Viewing the individual's collaboration practices in this broader context can be useful in identifying the wide range of tools that employees use for different tasks. For example, an employee may use a word-processing application to record knowledge for personal use, but use e-mail or instant messaging to exchange knowledge with the team – and a spreadsheet to convey information to the division.

The CIO needs to understand the specific requirements at each intersection between innovator class, business segment and activity domain – because they can vary widely. The idea is to give each group the collaboration tools and processes that bring the greatest value to the individuals within that group. At the same time, it is important to determine where groups need help collaborating with the rest of the organization or between activity domains. Disparate methods of collaboration across classes, business segments and activity domains can limit the flow of information and force users to create work-around conversion processes that can be time-consuming, error-prone and untraceable. Understanding these collaboration practices at this level of granularity can make it easier to determine where communication and collaboration break down, where integration may help eliminate manual conversion and where new tools can be adopted.

Highlights

One-size-fits-all approaches can harm—rather than help—collaboration practices.

Using the segmentation model as a starting point, organizations can ask a number of questions to determine requirements.

Assess the organization's capabilities

With a segmentation model in place, the CIO can more effectively assess existing collaboration practices and determine the next steps. An assessment may uncover discrepancies in the adoption rate of certain collaboration techniques or identify areas in which collaboration breaks down. The key is to identify collaboration gaps, inhibitors and opportunities at a granular level, so the CIO can focus limited resources and budgets on targeted improvements. General organizationwide assessments typically produce a one-size-fits-all approach, which can harm—rather than help—collaboration practices.

For each cell in the segmentation model, an assessment should answer the following questions:

- *What tools, technologies and processes are being used to collaborate?*
- *What are the organization's inhibitors to collaboration?*
- *Where does collaboration become manual, complex, time-consuming or error-prone?*
- *How does collaboration occur across collaboration classes, business segments and activity domains?*
- *Do decisions get delayed because of difficulties scheduling meetings?*
- *At the team level and above, is there an innovation culture in place?*
- *What specific plans need to be implemented, and how should the plans be prioritized?*

It is not unusual for an assessment to uncover significant roadblocks to collaboration. Such an assessment may highlight that the sales department's use of instant messaging within the team domain and voicemail in the divisional domain is slowing progress and change for the division. Or perhaps dreamers in the R&D department attend face-to-face meetings in the team domain while

Highlights

Disparate collaboration techniques can keep useful information from getting passed on from one medium to another.

The success of initiatives must be measurable in both qualitative and quantitative terms, but it's not always easy to track the effects of collaboration.

Organizations must focus on fine-grained value and benefits, as well as the long- and short-term impacts of incremental changes on the business.

using online asynchronous discussion forums for the divisional domain, resulting in the loss of important information between the team and the division. In a similar example, an organization may find that implementers in the IT department rely on e-mail to collaborate on the construction of an internal Web conferencing facility, while consumers in the same department use a “wiki” to share tips on how to use the Web conferencing capability effectively. In this situation, useful information may fail to get translated from one medium to the other. A thorough assessment affords the opportunity to bridge these gaps by determining specific actions for improvement.

Measure the results

For a collaboration strategy to add value to the business, the plans for improvement must be measurable. Held accountable by the business, CIOs must be able to show the concrete results of initiatives. Both quantitative and qualitative metrics can play an important role, but they must be meaningful—and they must delve deeper than a simple analysis of financial costs and returns.

It can be difficult to measure the effects of collaboration, but that doesn't mean the value can't be found. As Gartner Research asserts:

“Illustrative cost savings can be conceiving, even if they are not very precise. For example, describe a particular process currently performed in the organization and state how it could be changed by applying the proposed investments. Will the process take less time, have fewer steps and fewer errors, and will better decisions be made as a result of these investments? It is fairly simple to translate these expected improvements into illustrative money savings.”²

These benefits can manifest themselves as increased productivity, less travel, fewer labor requirements and fewer errors. Or sometimes a particularly powerful idea can lead indirectly to enterprisewide changes in culture, increases in revenue or greater market share.

Highlights

Organizations can measure the time it takes to schedule meetings to determine if the use of a collaboration tool or technique is justified.

It may be useful to track the number of suggestions employees offer—and what percentage of them eventually become executable plans.

With metrics in place, the CIO can establish and execute incremental plans for improvement.

For example, when measuring the effectiveness of person-to-person communication techniques, it can be useful to analyze not only the operational costs of the voicemail system and the instant messaging system, but also the time employees spend calling one another and leaving messages. In some cases, the productivity gains enabled by instant messaging can outweigh the costs of the system. One of the key features of an instant messaging system is the end user's ability to see—at a glance—the online availability of other users. Instead of wasting time on unanswered calls, the end user can go straight to a resource that is currently available and get a question answered or make a decision much more quickly. It may also be helpful to monitor the process of scheduling meetings. Organizations can measure the time it takes to schedule and confirm meetings among three or more people, taking note of the different scheduling tools used by business segments, collaboration groups and other organizations. In areas where the average time rises, CIOs can identify opportunities for advanced electronic calendaring and scheduling. Moreover, it can be useful to track the quantity and quality of innovative ideas by asking the following two questions: How frequently do employees, partners and customers make suggestions for improvement? What percentage of those ideas eventually become executable plans? If certain tools and processes create positive business results as determined by these qualitative and quantitative metrics, a CIO will have the needed justification for the investment.

Plan for greater collaboration

With a view of how organizational collaboration works and the means to measure improvement, it can be easier to develop more effective, incremental plans for improvement. The CIO can establish and execute different plans that are tailored to target cells within the segmentation model.

Highlights

Every collaboration strategy should address cultural inhibitors that are ingrained in corporate or team practices.

The CIO and LOB executives should work to open cross-hierarchical lines of communication among employees.

If employees are not encouraged to take risks, then it is unreasonable to expect them to drive innovation.

To foster an environment that encourages innovation, plans should address more than just technology. CIOs need to make sure to implement appropriate changes in the culture, technology, supporting services and the extended enterprise.

Culture

Culture plays a leading role in encouraging innovation. Every collaboration strategy should address cultural inhibitors that are ingrained in corporate or team practices. For instance, some organizations may have programs in place that actively encourage collaboration, innovation and risk taking for dreamers and consumers, but not for implementers. If this group is offered no incentives for collaboration and innovation, or if it is actively dissuaded through penalties, it can pose a serious obstacle to change. The CIO should make it a priority to work with line-of-business (LOB) leaders to identify and remove cultural inhibitors in the target groups.

The CIO and LOB executives also should selectively open cross-hierarchical lines of communication between employees in the organization. Between the areas identified in the segmentation model as needing greater collaboration, organizations should allow a free flow of innovative ideas. Some companies may choose to open these lines of communication for the entire organization, while others may find it appropriate to apply the strategy to only certain areas. Additionally, a collaboration culture should permit ideas and experiments to fail. If employees are not encouraged to take risks, then it is unreasonable to expect them to drive innovation.

It is especially important for the CIO to examine the IT department's own culture, identifying areas in which collaboration breaks down. Are innovators sufficiently supported? Do implementers have the tools to carry out change quickly? Do consumers have rich communication channels that allow for

Highlights

An innovative IT department will resemble an R&D group in its use and deployment of collaborative practices and innovation incentives.

There are a variety of collaborative technologies to choose from, but a single set of them probably will not fulfill requirements across the enterprise.

The CIO must address interoperability issues between the existing infrastructure and new collaborative technologies.

discussion with one another and for providing feedback to the implementers and dreamers? An innovative IT department will resemble an R&D group in its use and deployment of collaborative practices and innovation incentives. It will allow for exploration of new technologies, systems and delivery models (even nonstrategic ones) by providing early deployment zones, sandboxes and pilot projects with risk-tolerant areas of the business. Finally, it should address the patenting, publication and licensing of intellectual property that emerge from these activities.

Technology

It is important to choose the right technology for each group within the organization. The possibilities are far ranging: telephony, mobile devices, e-learning solutions, Web conferencing, group scheduling, online forums, ideation systems, instant messaging, e-mail and more. But one technology set probably will not fulfill the needs of every innovator class, business segment and activity domain across the organization. Each group will need a unique combination of technologies.

In addition, before adopting technology in any one area, the CIO must consider interoperability with both the existing infrastructure and the other collaborative tools that may be required to interact with it. Business segments often use disparate technologies. For example, the HR department may send spreadsheets through e-mail to facilitate hiring processes, but it must eventually convert that information to a format compatible with the enterprise resource planning system that the finance department uses. Incompatible technologies and data types can be found not only among business segments, but among activity domains and innovator classes, as well. An individual may spend hours each week compiling e-mail reports and distributing them at team meetings or in online teamrooms. Or a consumer may be forced to provide feedback to R&D through downloaded proprietary software.

Highlights

CIOs can enable more efficient format conversion in two ways: adaptor technology or a service-oriented architecture.

Employees need assistance to adopt new collaboration tools and processes.

No single support strategy will meet the needs of every individual.

At whatever point in the organization it occurs, format conversion can be time-consuming and error-prone – and it can make audits difficult. CIOs can address disparate collaboration technologies in two ways: Adaptor technology can convert information from one proprietary format to another to reduce inefficient manual work and errors. Or – a better approach – a business can strive for long-term adoption of open standards for infrastructure flexibility, such as that provided by a service-oriented architecture (SOA). An SOA can lay the groundwork for future adoption and integration of collaboration tools – and can help the CIO reuse infrastructure components to deliver services to business users quickly.

Support

Once a collaboration technology or process has been implemented, it is unrealistic to expect employees to make the transition without help. That is why CIOs should help facilitate the adoption of new tools by deploying collaboration experts – playing a role similar to that of IT help desk professionals – who can act as catalysts for faster, fuller acceptance and use. It is important not to assume that one approach will fit all needs. Services need to work for the business segment and group to which they are being delivered. Some groups may adopt a help desk approach more readily, whereas others may prefer a discussion forum. If the change is a new marketing Web presence, for example, the CIO should address questions like these:

- *What expert collaborative facilitation should be provided to support the dreamers in the marketing department, as they work in their team and divisional domains?*
- *How can we support the implementers in the IT department as they relate to the team and the company?*
- *What kind of support might the consumers – including our partners, sellers and customers – need in the intercompany domain?*

Highlights

A collaboration plan should extend beyond the traditional enterprise—to partners, customers, competitors, analysts, industry standards communities and others.

Implementing collaboration technologies without considering their practical use and business value can result in wasted investments and higher support costs.

The CIO also may determine that the services do not fall within the realm of IT—an entirely acceptable conclusion that should, nevertheless, be documented as part of the CIO’s overall strategy. Doing so can help ensure smooth coordination of collaboration efforts across the company.

The extended enterprise

A collaboration plan must extend not only to employees but also to partners, customers, competitors and analysts—and to members of the media, industry standards communities and others. By including these members of the extended enterprise and applying the same principles, CIOs can take a systematic approach to infusing outside knowledge into internal processes. As a result, customers, partners or other members of the extended enterprise can easily play multiple roles—as dreamers, implementers or consumers—and subsequently add greater value to the organization. A customer can act as the consumer, the implementer and the dreamer, sharing in the organization’s investments and becoming more loyal. With greater communication and involvement, partners can help drive and react more quickly to the organization’s innovation efforts.

Conclusion

Collaboration practices within a given organization can be complex, with shifting, overlapping processes, tools and requirements across innovator classes, business segments and activity domains. Simply implementing collaboration technologies—such as enterprisewide instant messaging or videoconferencing—without considering their practical use and business value can cause more harm than good. If the technology is unsuited to employees’ needs or employees are not provided with sufficient facilitation during the transition,

they may never choose to adopt the new tool. If partners or customers find a collaboration process to be cumbersome or unintuitive, they may decide to do business with another company. If that happens, potential sources of innovation may lose confidence, the organization will have wasted an investment, and the business may even face higher support costs.

As an important liaison between IT and the business, the CIO holds the responsibility for recognizing that each employee faces different challenges based on innovator class, business segment and activity domain. By grasping these details, the CIO can create a targeted, cohesive collaboration strategy that minimizes waste and accelerates the organization's plans to adopt a culture of innovation. The key lies in giving employees, customers, suppliers and partners the tools and processes they really need – and can use effectively – and then relying on their collective ingenuity to transform and differentiate the organization.

For more information

IBM can help CIOs in organizations across industries drive innovation by enabling greater collaboration among employees, partners, customers and others. With its investment in collaborative technologies and its commitment to open communities, IBM can offer valuable insight into the future of collaboration – and the steps each organization can take to stay ahead of the competition. For more information about the role of collaboration in innovation, visit:

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 - 2 Gartner, "How to Justify Knowledge Management and Collaboration Projects," by Jeffery Mann, August 2006.