Outlook Point of View | Global Operating Model

Talent and technology: the new dynamic

By Paul Daugherty and Bhaskar Ghosh

In an age where the traditional borders between IT and the business—and between businesses themselves—are disappearing, companies must rethink their IT operating models and roles so that they can harness the potential of digital technology.

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The digital world runs on software. Applications are now a driver of business strategy—and this means they can no longer be monolithic and slow to change.

As businesses become increasingly dependent on software, they must turn to new application strategies. These strategies are platform-based, with reusable components (liquid); leverage the latest advances in cognitive computing and machine learning (intelligent); and are connected to a larger ecosystem of partners, suppliers and customers, as well as to the Industrial Internet of Things (connected).

And as companies embrace these new strategies, traditional boundaries are blurring, even disappearing—between IT and the rest of the enterprise, between the inside and outside of an organization, between talent and technology. At the same time, companies are reacting to varied market demands and the requirement to deliver technology at different speeds.

This has significant implications not only for IT operating models but for talent strategy and planning, particularly with regard to new roles needed across both IT and the business. After all, who will build the software that will run the borderless business?

Today, most application development processes involve a number of familiar roles: strategists (in charge of IT strategy and enterprise architecture), functional analysts (who work with subject matter experts to capture requirements), solution architects (who translate the functional requirements into architecture and design) and those in development and deployment, all overseen by project managers and development managers. These roles worked when application development didn't need to adapt so quickly to the pace of digital technology or be fluid enough to rapidly respond to new opportunities and threats from non-traditional competitors. But the very different development world that is emerging requires four specific new roles.

**Platform director.** The idea behind fluid (or “liquid”) applications is that they must be easy to update or replace. They require a modular architecture that segments the application into smaller components, each of which performs discrete functions. One of the ways enterprises can create these modular architectures is through emerging software platforms that isolate (or “abstract”) technical complexity from business functionality so that both new and existing applications are simpler to use.

Such platforms require the new role of platform director: someone responsible for designing and executing those abstraction strategies and then managing the work on that platform. In addition, platform directors have to constantly respond to business change and translate user needs back to the engineering team. They need to manage the application programming interfaces (APIs) that enable external developers to work with the platform.

At the same time, they are in charge of governance of both the development and maintenance of their platform, so they create and manage governance models that strike a balance between enabling open innovation and enforcing standards for software development.

When a company creates an open, online platform, a platform director would act almost like a product manager: someone who understands the needs of both customers and partners.

**Citizen developer.** The role of developer today is no longer simply an internal role performed by a group of employees...
in their cubicles. Thanks to software components that can be easily sourced and assembled, technologies that automate parts of the software development cycle and open platforms that provide access to existing capabilities, anyone—not just IT—can develop software solutions. In other words, everyone (potentially) is a citizen developer, and they can be inside or outside of a company.

Citizen developers can rapidly generate new solutions through faster innovation and prototyping, with accelerated development and delivery driven not only by IT but also by business units and partner organizations—really, by anyone in the extended ecosystem. The result: a significantly shorter development cycle in which applications are no longer built and maintained in separate phases. Engineering innovations such as DevOps, which integrates development and operations, can help citizen developers manage these shorter cycles.

Ecosystem builder. As software increasingly drives business strategy, companies will require another new role, one that evolves the traditional role of supplier relationship management for new, software-driven business ecosystems.

By adopting a borderless business mindset, a company is able to collaborate with partners, suppliers and even competitors in the delivery of new products and services to the market. Drugstore giant Walgreens, for example, has developed a health ecosystem around its Prescription API, which enables users of third-party mobile and tablet apps to order refills of prescriptions that had been originally filled at a Walgreens pharmacy. Building and expanding this type of borderless business will require skilled ecosystem builders.

Intelligence architect. The promise of intelligent applications is that systems can interpret data or conditions, apply codified knowledge or logic, and make decisions—all with minimal human intervention. Companies need to embed software intelligence everywhere in their applications and processes to manage growing volume, velocity and complexity, and to maximize the business value of internal and external data, including that from the physical world. Creating such applications will require a new kind of architect: an intelligence architect. People in this role will work with enterprise architects to create the information strategy, and then monitor application development in light of the intelligent architecture.

Intelligence architects have another function: to train intelligent applications. Already, companies foresee this need. According to a recent Accenture survey, 77 percent of executives believe they will have to focus on training their applications as much as they do on training their people. And some have already started this process.

Technology company IPsoft, for example, has created an artificial intelligence platform that can be used in environments such as help desks and contact centers. Before it can operate effectively, however, it needs to learn the overall IT and business environment in which it works. At first,

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it uses the same manuals that IPsoft employees use—it, however, reads 300 pages in 30 seconds. Then it adapts and learns new processes and interactions on its own.¹

**Next steps**
The roles of platform directors, citizen developers, ecosystem builders and intelligence architects will evolve as the software-driven business evolves. As you move forward, here are some ideas to help speed the evolution.

**Build on emerging responsibilities.** While it’s possible there will be job ads seeking talent in the specific roles discussed here, it’s more likely that these roles will be defined by expanding responsibilities within the organization. Consider Walgreens’ successful Prescription API. The company and third-party APIs, the overall platform and the partner relationships must be managed; over time, these managers might well become platform directors or ecosystem builders.

**Provide structure for citizen developers.** Chances are, you already have citizen developers in your company, perhaps within your business units or across your business ecosystem. Managing this exponentially growing class of developers requires effective governance and controls, as well as encouragement and support; in some cases, citizen developers would be managed by an ecosystem builder.

**Apply intelligent automation to application lifecycle practices.** Intelligence architects’ skill building can begin by layering intelligence into the application development lifecycle. Companies can use software intelligence across application development, testing, deployment and maintenance to manage increasing volume, velocity and complexity. Look for automation opportunities across the application lifecycle. Routine tasks and decisions can be reduced or eliminated using accumulated knowledge and experience to improve productivity through effort reduction and leaner processes.

**Implement a multi-speed IT operating model.** By designing the IT function to be able to move various levers to deliver IT at different speeds, CIOs enable their organizations to be more nimble in meeting business and customer needs as well as reacting to a changing market environment.

The borderless business will be new territory for most organizations. Navigating it successfully begins in part by acknowledging that every business is now software-driven—that competitive advantage is coming from a more nimble approach to assembling and reassembling, rather than coding, applications to keep up with a much faster-paced environment.

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