Introduction

The CIO, who is on the front line of digital disruption, faces a digital dilemma.

First, disruption creates an urgent pressure for transformation. Long-established firms are being “Ubered” and “Amazoned”. Insurgents may be taking market share through lower costs, faster time-to-market and superior customer experience. In many firms, customers, competitors, CEOs and boards are looking to the CIO for rapid digital transformation and looking for it now.

But the CIO is also charged with providing the stable platform that supports ongoing operations. These are the operational sinews that process the orders, book the sales, schedule the parts and ensure regulatory compliance. Failure or down-time of these back-office processes, which often reside on legacy technologies, can be disastrous for the firm (and for the CIO).

The dilemma is amped up by pressures of risk and time. Accelerated transition can be high risk—data that does not integrate, systems that go down, more human error in an uncertain environment. Added to this is the risk factor of an overstretched IT department trying to make everything happen at once.

Finally, transformation isn’t just about machines—it is about people. For example, a bank may have IT personnel who are steeped in a culture of risk management, process and strict regulatory adherence. These are extremely valuable assets that cannot be morphed into agile, digital-savvy disruptors overnight.
How does the thoughtful CIO strike the right balance between demands for transformation and stability? Between speed and risk? Between two very different cultures? In this article, sponsored by Hewlett Packard Enterprise, The Economist Intelligence Unit proposes an alternative to an overnight, all-or-nothing approach: blended IT. This is a dual-speed approach that supports a period of coexistence between digital and legacy systems—giving the CIO the time and resources to manage the dilemma of disruptive change.

Not all companies are faced with a clear Uber or Amazon disruption scenario. The following are some early warning signs that digital disruption might be coming your way.

1. **Is venture capital (VC) targeting your industry?** VCs love digital challenges to traditional industries. While they may not get it right all the time, a lot of VC money flowing into your industry indicates a collective bet against your business and its technology.

2. **New pressure on pricing:** Many disruptors use technology to compete on price—for example, robo-advisers are undercutting traditional asset management fees by 75%. Are your sales people reporting pressure on prices?

3. **Loss of younger customers:** Surveys show that the younger demographic is more comfortable with technology, and less loyal to established brands, than boomers. An out-migration of this critical customer segment could signal disruptive alternatives.¹

4. **Your best IT people are defecting:** Is your culture so old-school that you are losing IT personnel to the upstarts that are challenging you?

5. **Legacy system bypass:** Are your internal customers going outside the system to get things done? Are they practicing “bring your own app” to get the functionality they need? Your technology may be making you vulnerable to external disruption.

6. **A competitor acquires an insurgent:** Some firms are concluding that the best way to beat disruptors is to buy them out. The combination of a promising new tech approach with the customers and deep pocket of an established competitor can present a potent disruptive threat to the old order.


The fast track—transforming systems that face the customer

Applications that create the customer experience should be high on any CIO’s priority list for digital transformation.

Over two-thirds of consumers’ leisure time online is spent on a few major sites—Facebook, Yahoo, Google, etc.—that have built their businesses on a great customer experience. Furthermore, digital natives such as Amazon, Apple and eBay dominate the consumer online commerce experience.

“What we are seeing is a consumerisation of IT,” says Michael Krieger, CEO of MRK Marketing Services and a former marketing and IT executive at Ziff Davis and Hitachi. “The digital expectations of today’s customers are clearly being set by the digital masters of the web.”
What do these companies do really well? First, they present the customer with a compelling user experience—attractive, informative and designed to drive to a transaction or service. The customer finds the same on any device they choose to use. The required data is drawn from multiple parts of the organisation—pricing from finance, products from a catalogue, availability from inventory—and presented as a seamless transaction. Finally, the experience is highly personalised, from the order history to the recommended offers.

For the CIO, these expectations can be captured as a series of technology requirements:

- **Digital agility**—a capacity to respond rapidly to consumer preferences and market movements
- **Device delivery**—networks that can serve all major device formats and operating systems
Cross-silo integration—an ability to draw data from multiple points within an organisation

Data management—repositories and analytics capable of handling billions of data points

Cultural transformation—rapid retraining and transition of IT personnel

Scalability—an ability to cost-effectively ramp up operations—witness Facebook’s 28,900% increase in visitors in the last decade.

These requirements are compelling drivers for digital transformation to platforms that can support multiple devices, integrate disparate data and provide the computing power for advanced analytics.

The first proposition of the blended IT model is therefore to fast-track customer-facing functions—e-commerce, CRM, social media—within the digital transformation journey. This dual approach will quickly raise digital standards where they are most needed—in the eyes of the customer. Secondly, this allows the IT organisation to take a more measured, risk-managed approach in the migration of mission-critical internal systems.

The steady track—transforming systems that support operations

There are a number of reasons internal-facing applications—“the back office”—can and should take a less rushed, more risk-managed approach.

First, there simply is not the same time urgency as with customer-facing applications—internal analysts and suppliers do not require the web experience one finds at Facebook.

Second, these systems are often integrated tightly into disparate operations of the firm—for example, an order fulfilment system will pass through sales, finance, inventory, logistics and customer management. These stakeholders need their say, and no overnight timeline is going to allow the input and collaboration that will make a replacement system work. “These are the systems of record for many parts of the organisation,” says Mr Krieger. “You won’t be able to deliver anything to the customer on the front end, if your back-end systems go down.”

Unlike many digital applications, these are systems that do not require continuous updates to stay abreast of competitors and consumer demand. Refresh cycles can be scheduled as dictated by internal needs.

Many of these internal systems are housed on legacy technologies—proprietary and sometimes purpose-built systems that defy rapid transformation. While often maligned by digital proponents, many of these systems are doing their current jobs very well, are understood by their users and are relatively immune from hacking and cyber-attacks.

This “coexistence” will allow a period of cultural transition—training, repurposing of employees, recruiting—that is required to transform people.
One target for a blended approach are the monolithic enterprise resource planning (ERP) systems. “The traditional concept of end-to-end services like ERP reduces agility and the ability to compete,” says Alan Boehme, chief technology officer and chief innovation officer at The Coca-Cola Company. As a result, he is leading an effort to break up—but not scrap—his company’s legacy systems. “Smart companies are not talking about replacing their entire systems. They’re modernising specific portions of them through SaaS.”

In other words, these systems do not remain static, but change is instead measured, sequential and managed for risk. The steady track allows for a sequence of mini-transformations—perhaps finance first, then supply chain, then distribution—in order of impact and ease of implementation. Finally, a practical result is that the IT department can pace itself and not be overwhelmed in the course of an over-accelerated transition.

**The blended IT model**

Every company’s digital journey will be its own. But the following model can be used as a high-level road map for CIOs considering a blended IT approach.

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<td>Customer-facing systems</td>
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<th>Objective</th>
<th>Outstanding customer experience</th>
<th>Outstanding operations support</th>
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<td>Success metrics</td>
<td>Agility, speed to market, customer satisfaction, scalability</td>
<td>Dependability, user satisfaction, zero downtime</td>
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<tr>
<td>Target corporate functions (examples)</td>
<td>Customer interface, Product catalogue, Digital marketing, Customer relationship management, Social media</td>
<td>Order fulfillment, Inventory, Supply chain, Billing and credit, Data analytics, Regulatory compliance</td>
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<tr>
<td>Culture</td>
<td>Innovative, customer-centric, operating agility.</td>
<td>Risk-managed, regulatory compliant, systems-focused.</td>
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<tr>
<td>Device support</td>
<td>Mobile, laptop, tablet, etc.</td>
<td>Internal systems</td>
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<tr>
<td>Infrastructure</td>
<td>Cloud or hybrid cloud (including private cloud)</td>
<td>Mainframes and on-premise servers</td>
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No time to waste, but time to do it right

Blended IT is not an argument for standing still, or for a permanent state of coexistence between two separate systems.

At the current pace of change, even the most cutting-edge digital systems become legacy technologies in a matter of months. Cultures may defy change. No temporary architecture should stop the pressure to accelerate the fast track of the digitally transformed systems.

A firm that adopts the dual approach of blended IT should also guard against a new complacency with its legacy technologies. These systems—many installed in the eighties and nineties—will only become an increasing drag on organisational agility and innovation. And as most CIOs know, they are exceedingly high cost to maintain. The blended IT approach simply allows order, planning and time to be part of a still-needed migration path.

“Established companies must embrace the charter to simultaneously manage for the present and the future,” says Robert Siegel, general partner at XSeed Capital and a co-instructor of The Industrialist’s Dilemma, an elective course at the Stanford Graduate School of Business. “That means creating pockets of innovation and putting incentives in place to encourage the people involved in new initiatives and those focused on legacy activities to work together to transition from the old to the new.”

Eventually, many CIOs will want to move their IT architectures to a unified, highly agile digital platform. For many that will mean migration to a cloud or hybrid cloud environment. Blended IT is not a substitute for this digital end-game—it is just a measured, risk-managed and practical route to getting there.