Deloitte.

Tech Trends for Consumer Products 2013
Elements of postdigital

Preface

Welcome to Deloitte's annual report examining trends in technology put to business use. Once again, we've selected ten topics that have the potential to impact businesses over the next 18 to 24 months.

Developing the list of trends is an ongoing process of primary and secondary research. The process includes:

- Feedback from client executives on current and future priorities
- Input from Deloitte industry and practice leaders
- Perspectives from industry and academic luminaries
- Research from alliance partners, industry analysts, and competitor positioning
- Crowd-sourced ideas and examples from our global network of practitioners

This year's theme, *Elements of postdigital*, examines the convergence and controlled collision of five forces – Analytics, Mobile, Social, Cloud, and Cyber – as businesses move closer to achieving the possibilities of the Postdigital EnterpriseTM, where all five forces are mature, implemented, integrated, and baked-in instead of bolted-on. These five forces offer a new set of tools for business, opening the door to a new set of rules for operations, performance, and competition. IT can deliver engagement and empowerment to business customers, both innovating and industrializing.

The Postdigital era, like the post-industrial era, reflects a "new normal" for business and a new basis for competition. In post-industrial times, we didn't forego industrialization, we embraced it. The Postdigital era is similar, but with digitalization as its core.

It's an uncommon time to have five forces – all newly emerged, all evolving, all technology-centric – already impacting business so strongly. It is an opportunity for IT to deliver extraordinary value via modest investments on top of a strong legacy technology footprint.

Our 2013 report shares ten trends grouped into two categories. *Disruptors* are opportunities that can create sustainable positive disruption in IT capabilities, business operations, and sometimes even business models. *Enablers* are technologies in which many CIOs have already invested time and effort, but which warrant another look because of new developments or opportunities. Enablers may be more evolutionary than revolutionary, but the potential is often there nonetheless to elevate the business game.

For 2013 we have also attempted to personalize our general Tech Trends article to include topics and examples specifically relevant to the Consumer Product industry. While we have maintained much of the rich content contained in the original version of this article, we've specifically included examples from leading Consumer Products companies such as Schwan's (Mobile Only and Beyond) and OfficeMax (Design as a Discipline), and have also featured our collaboration on Big Data with the Grocery Manufacturers Association (GMA).

Each topic also includes an external point-of-view in the *My Take*. This year, you'll also find a new section called *Flying Car Future*, which takes a provocative view into where the trend may be headed in Horizon 3 – and beyond. Last but not least, where we deem applicable, we've included our Consumer Products perspective to share our industry insight on the implications of the respective trend.

Each of the 2013 trends is relevant today. Each has significant momentum and potential to make an impact. And each warrants timely consideration. Forward-thinking Consumer Products organizations should consider developing an explicit strategy in each area – even if that strategy is to wait and see. But whatever you do, step up. Provoke and harvest disruption. Don't get caught unaware or unprepared.

Thank you for your interest in this year's report. We welcome your feedback and questions. To the many executives who have provided input into Tech Trends for Consumer Products 2013, thank you for your time and insight. We look forward to having more of the essential dialog between business and IT.

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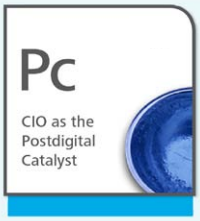
At a Glance

Disruptors

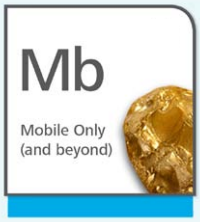
Opportunities that can create sustainable positive disruption in IT capabilities, business operations, and sometimes even business models.



CIO as the Postdigital Catalyst

Catalyzing value from the elements of mobile, social, analytics, cloud and cyber

CIOs can lead the move to tomorrow – reshaping business as usual, and driving innovation. They are faced with unprecedented opportunity for innovation such as the potential to enable Customer Intimacy at scale for Consumer Products Organizations. How should business respond? When CIOs harness the convergence of the five postdigital forces, they can change the conversation from systems to capabilities and from technical issues to business impact. Plan big, start small, fail fast, scale appropriately.



Mobile Only (and beyond)

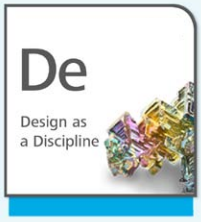
The enterprise potential of mobile is greater than today's smartphone and tablet apps

Mobile should be top of mind for organizations. But don't limit your ideas to Mobile First. Think *Mobile Only*, imagining an untethered, connected enterprise. The next wave of mobile may fundamentally reshape operations, businesses and marketplaces – delivering information and services to where decisions are made and transactions occur. The very definition of mobile is changing – as evidenced by our featured Consumer Products organization that already improved customer service efficiency and quality through the Mobile Only paradigm.

Social Reengineering by Design

How work gets done is no longer constrained by 19th century platforms

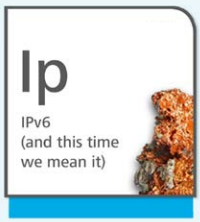
Businesses are no longer building technologies just to enable interaction – they are now engineering social platforms for specific context – platforms that can relieve rather than serve traditional organizational constraints such as deep hierarchies, command-and-control cultures, physical proximity and resource concentration. Social reengineering can fundamentally transform how work gets done, but it isn't just a "project." It's a strategy. It's time to uncover the opportunities for Consumer Product organizations to harness the power of the crowd to augment business operations through external communities.



Design as a Discipline

Inherent, pervasive and persistent design opens the path to enterprise value

Driven by consumer experience, intuitiveness and simplicity are moving from IT aspirations to enterprise mandates. Design is not a phase; it's a way of thinking. Beyond look and feel, beyond user interfaces. Isolated in silos of user experience (UX), marketing and product development, individual design functions may be reaching their limits. What's needed is a collaborative, immersive environment to work together. Design is not just an "IT thing" or a "marketing thing" or a "product engineering thing." It's an *enterprise* thing as evidenced by our featured Consumer Products organization that dramatically improved user productivity and customer experience.



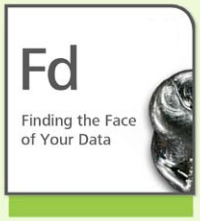
IPv6 (and this time we mean it)

Ubiquitous connected computing is straining the underlying foundation of the Internet

Internet Protocol is the foundation of networking, but we've run out of addressable space for addressable items. The more important it is for your business to connect with the outside world, the more important IPv6 is for your future – and the more urgent this issue is for you today. IP addresses are woven deep into applications and infrastructure, and migration can bring challenges. While there's no drop dead date for IPv6, the final IPv4 address blocks have already been allocated. Careful and proper adoption will take time for planning, execution and verification. The time to start is now.

Enablers

Technologies in which many CIOs have already invested time and effort, but which warrant another look because of new developments or opportunities.



Finding the Face of Your Data

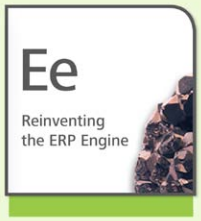
Fuse people and technology to discover new answers in data – and new questions, too

Humans do some things really well, while computers are better at other things. It is this particular combination that enables the identification of new patterns and relationships across dimensions of data – structured and unstructured, internal or external, big or otherwise. By combining human insight and intuition with machine number-crunching and visualization, companies can answer questions they've never answered before. For Consumer Products organizations, Deloitte's collaboration with the Grocery Manufacturer's Association is raising awareness of the business value of data visualization.

Gamification Goes to Work

Driving engagement by embedding gaming in day-to-day business processes

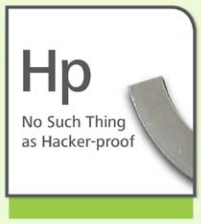
Gamification can encourage engagement and change employee, customer and supplier behavior, creating new ways to meet business objectives. The goal is to recognize and encourage behaviors that drive performance – sometimes in unlikely places. This trend has moved beyond hype and is already demonstrating business value. More specifically, Deloitte's collaboration with the Grocery Manufacturer's Association is exposing the significant potential for consumer-targeted applications (such as in-store gamification).



Reinventing the ERP Engine

Revving up data, hardware, deployment and business model architectures at the core

If you could really get ERP cheaper and faster, what would you do differently? Run materials requirement planning (MRP) many times each day? Close the books in a matter of minutes? Optimize delivery routes on-the-fly in response to new orders, traffic or customer preferences? What would it mean for business agility, capability and competitiveness? If approached with a focus on reinventing business capabilities, the evolution of the ERP engine can yield significant competitive edge.



No Such Thing as Hacker-proof

If you build it, they will hack it. How do you deal with that?

You've either been breached – or you soon will be. Your boss knows it, your business knows it, your board knows it, your customers know it, and hackers know it. It's your job to deal with it. That means changing the way you think about defending yourself. Be more proactive about the threat – and react more rapidly when breaches do occur. Detect them quickly, respond, clean up and adjust your tactics. Be outward-facing, prepared and ready in advance. Anticipate and prevent when possible, but be ready to isolate and encapsulate intrusions to minimize impact. It's better to lose a finger than to lose an arm.

The Business of IT

After reengineering the rest of the business, IT's children deserve some shoes

Fragmented processes and systems can prevent IT from effectively delivering on the changing demands of the business. IT may need to transform its own management systems to keep up. Is this ERP for IT? Maybe someday. Today, CIOs are crafting solutions from industry-leading products and testing business cases at each step. And the potential benefits are worth the investment – not only in driving down costs and better managing risks, but in positioning IT as the business partner in provoking and harvesting disruption in the Postdigital era.

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Enablers

8 Reinventing the ERP Engine

With a super-charged engine, businesses can drive new performance

ERP is no stranger to reinvention, overhauling itself time and again to remain relevant through disruptive waves of client/server and the Web. Its formula for success? Expanding the very definition of Enterprise Resource Planning (ERP) from financials to manufacturing to supply chain management to CRM to HR and more. Beyond new functional capabilities, it has also expanded into information – business intelligence, reporting, and analytics allow organizations to build predictive models. For a while, the focus was extensibility through integration platforms, application servers, and orchestration suites. Today's momentum is around ubiquity. Organizations are striving to make ERP accessible in many ways – on your mobile device, in your collaboration suite, or in your social streams.

This manifest destiny of the service catalog has been an important part of ERP's strategy, and will likely continue. But that's not our trend this year. Something else has been happening, with roots closer to Moore's Law than to Porter's Five Forces. The engine of ERP is being reinvented.

The underlying drivetrain of ERP had remained constant throughout its past evolution – on-premise, licensed, single-tenanted software stacks built on transactional relational databases, running on enterprise-class machines in dedicated data centers. This time, though, that drivetrain is being changed, with torque-rich updates at the infrastructure, data, and application layers.

In-memory, column-based databases allow sub-second response time for the many complicated queries. Distributed computing, virtualization, and cloud-based infrastructure are driving total cost of ownership (TCO) reduction, a shift from physical to logical, and from fixed to variable expense. Appliances and engineered systems have led to impressive levels of integration across the hardware and software stack – making the landscape not only potentially easier to manage, but yielding higher price/performance efficiencies. Multi-core and massively parallel CPUs, advent of cell CPUs, incorporation of advanced GPUs, durable and affordable solid-state storage, more efficient network infrastructure, and hybrid memory architectures allow real-time processing of torrents of both structured and unstructured data, and real-time mobile enablement of complex back-office transactions. Even the crown jewels are not exempt. Some enterprise applications themselves are being rewritten with columnar data, multi-tenant, subscription-based services. These architectural shifts reflect the changing role of ERP from a process-driven to an event-driven mindset.

The traditional industrial-grade engine of ERP made sense in the days of rigid, automated, highly standardized business processes. Processes are a sequence of activities – planned, predictable, repeatable, and often inflexible. They should have a big, powerful engine to drive scale and efficiencies on well-defined tracks.

The new event-driven world still uses processes, but they have become flexible, agile, and configurable based on the event that just occurred – within the core, or at the edge. The old engines could not process billions of events at near real-time speeds and allow this maneuverability. Thus the reinvented engine – a necessary condition for real-time processing of disparate data at competitive price points.

But that doesn't mean every part of the business should be reimagined – or that the upgraded foundational layer doesn't have benefits in the old way of doing things. Many organizations may find themselves with a mix of the new and the old engines – taking advantage of point technical upgrades for "locomotives" to help drive efficiencies, and making strategic bets on agile "sports cars" to reshape business as usual. Unprecedented speed and flexibility – coupled with ERP's ongoing functional expansion into information domains and ubiquitous mobile access – are together leading to the end game of hyper-productivity. In either case, the reinvented ERP engine is at the heart of the investment – and revitalizing one of the business' most strategic (and expensive) assets: the enterprise application suite.

History repeating itself?

The evolution of ERP has been featured as a technology trend in previous years, so why is the retooling of the engine headline-worthy news? And how is it different than previous reincarnations?

	What were the challenges?	What's different in 2013?
Best-of-breed enterprise applications[1]	• Extensibility was about easing integration into/out of the core ERP – and accommodating distinct other services to fulfill an end-to-end process. It was a sensible approach – especially with innovative edge offerings emerging in the cloud. But it is essentially a "surround strategy" for the core ERP offering – providing neither efficiency nor cost gains for the core, nor offering avenues for innovation of how business transacts those core processes. • The leading approach promotes an increasingly heterogeneous footprint – featuring a host of operating systems, hardware configurations, databases, application servers, and software packages. The efficiencies of integrated, engineered systems were nearly impossible to realize.	• Aggressive acquisitions have simplified the vendor landscape, though new players are emerging in targeted domains. Consolidation provides the opportunity for disparate services from different modules to share the same operating environment and take advantage of the engine's reinvention. • Heterogeneity is not going away, with most organizations landing on a hyper-hybrid cloud model[2] – a mix of on-premise license based software and cloud services. But opportunities to improve cost performance of the core remain – as do chances to introduce some significant changes to how the business operates by taking advantage of the geometric improvements in the engine "power to weight" ratio.
End of the "Death of ERP"[3]	• The prediction that large, global, complex organizations would likely retain existing on-premise, license-based traditional ERP software for the core of their business has demonstrated itself to be true. But while the processes are served by the traditional ERP model, they do not have to remain stagnant on the traditional engine. Opportunities for new efficiencies and improved TCO may have been ignored in the philosophy of preserving the predictability and stability of the core.	• Engineered systems, in-memory computing, and a broader shift to cloud infrastructure and platform enablement of parts of the core ERP landscape have the potential to improve cost and performance characteristics of the preserved core. • *Ad hoc* and *de jure* standards adoption of concepts such as MapReduce reflect the shift to address not just the application tier but also the data tier, both integrated with and parallel to the in-suite capabilities. • Importantly, there are opportunities to introduce the newly overhauled engine without open-heart surgery of existing core processes – either by focusing on adjacencies to the transactional layer (e.g., big data or analytics extensions to core financials, manufacturing, supply chain) or by driving adoption in the non-production parts of the solution landscape (stage/test/development environments, or potentially even phasing the new engine into disaster recovery instances). • 10x or even 20x performance improvements at the data, transactional, or analytics tier can be translated to inverse levels of cost savings for a given workload. This may allow ERP nodes to be deployed in more granular and agile fashion around the globe. • The black box nature of engineered systems may signal a return to the days of the AS/400 systems administration being an extra duty for the payroll supervisor or shop floor manager.

Technology implications

In a world of standardized rigid business processes, ERP engines were built to be industrial-grade: high transactional scale; pools of dedicated processing resources to deal with sporadic large, long-running batch cycles; racks of spinning discs to manage production volumes (and silos of tape to house data archives); expensive active-active redundant system landscapes at multiple locations for fault tolerance and disaster recovery; infrastructure procured to handle edge cases of volume, concurrency, and growth. All pulled efficiently by the big locomotive engine along set rails. The new world looks different at each layer of the stack, with implications to the rest of your IT portfolio.

Topic	Description
Virtualization	Virtualization plays an important role at the compute, storage, operating system, platform, terminal, and application levels. Many vendors' reinvented ERP engines allow for more advanced virtualization approaches than organizations may have previously encountered, moving above the infrastructure and OS layers into the platform and application space, and promoting cross-hypervisor portability of workloads. Monitoring and management tools should be updated for visibility and control over the new footprint. Orchestration is the next frontier, and governance is important to guide adoption, preempt instance sprawl, and enforce policy infringements discovered via monitoring and environment maintenance.
In-memory solutions	Conventional ERP solutions (transactional and informational) have been dependent on physical disc, throttled by input/output calls and separate resource-intensive cycles for data retrieval, synthesis, and analysis. In-memory solutions shift the data from physical bits on spinning disc to logical units living in rapid-access memory (RAM). With the data universe in cache, querying, aggregation, and processing can be dramatically improved – both in response times for traditional requests, and in the ability to process more complicated queries across a much wider data domain. Today in-memory is often used for analytics, but several vendors are looking to extend their reach to transactional processes. A shift to include column-oriented database engines supports the analytics query improvements and offers interesting new potential for design of the transaction processing. New ERP architectures are leveraging large memory segments to store and retrieve large portions of the core database, thus reducing the I/O required to retrieve data from disk.
Integrated infrastructure systems	Appliance-like solutions providing integrated solutions across the compute, storage, networking, and management stacks. Advantages include certified interoperability, consolidating monitoring and maintenance solutions, a potential decrease in required benchmarking and testing, and – for some vendors – the ability to take advantage of new technologies for timely, secure, low-latency connectivity between the layers of the infrastructure stack and communications backplane.
Unstructured data	Sometimes lumped under the header of "not only SQL" (NoSQL), the new ERP backbone can reconcile the need for schema-based relational databases for transactional records with the ever-growing importance of semi-structured and unstructured data. Data disciplines need to adapt to an inevitable mix of structured and unstructured data – affecting data architecture (including semantic relationships, correlation, and context), data stewardship (cleansing, upkeep, and archiving), and data governance (metrics, ownership, and oversight).
Integration	Beyond the growing functional heterogeneity of business processes being fulfilled by a collection of leading products and solutions, there is also potential for foundational heterogeneity as organizations find themselves migrating their ERP engines over time. This creates an even greater sense of urgency for integration capabilities to orchestrate the interaction of services and data, inside and outside of the organization, across a changing collection of subscribers and providers.

Lessons from the frontlines

ERP at light speed

A global glass and ceramic manufacturer wanted to consolidate multiple ERP applications to centralize their global operations and create a more reliable infrastructure to support their global manufacturing.

In the past, this kind of ERP infrastructure was built by acquiring hardware components, often from multiple vendors, and spending months integrating them to operate as a single cohesive unit. For this manufacturer, a pre-integrated, engineered solution was adopted instead. Rapid deployment of the infrastructure helped accelerate the implementation of the underlying ERP application as well, shortening the schedule from months to weeks in comparison to typical systems implementations. Once the hardware arrived at the data center's loading dock, the system was up and running in two days, greatly reducing installation time of the system.

With the single integrated system, the company has reduced maintenance needs and lowered the total cost of ownership. And with performance improved by a factor of 15 times over the legacy system, they are able to process orders in a more timely manner, execute demand planning reports more efficiently, and alter their supply chain processes in real time. Instead of focusing their technology and experience on managing complex IT systems, they can focus on the innovation that defines performance in their operations – and respond more effectively to meet changing market needs.

A roadmap for improved performance[4]

Garmin, a leader in navigation and communication products, wanted to reduce the cost and increase the performance of its business-critical systems. One of the company's specific goals was to reduce the cost of ownership of supply chain and demand management systems that were processing 13 million queries and 30,000 batch jobs and reports each month. Management also wanted to fix reliability issues with Garmin Connect, which supports the company's fitness segment, processing 40 million queries per week. In addition, Garmin wanted to build a foundation to support aggressive year-over-year data growth, reduce unplanned system outages, and provide timely system and data recovery should an outage occur.

To realize these objectives, Garmin deployed two massive-memory database machines. Consolidating four production databases and 20 non-production databases led to maintenance and energy cost savings, with database performance increasing up to 50%. Even as Garmin Connect's customer traffic grew by 400% – with a subsequent data expansion from three to 12 terabytes – planned and unplanned database outages were also reduced. Storage area network backup times were cut in half, and the time required to duplicate Garmin's largest database was reduced from 8 days to 10 hours. In addition, Garmin was able to more accurately forecast demand, efficiently process orders, and effectively support just-in-time manufacturing.

Answering the big data call

The wireless carrier market is a fast-moving industry with customer churn a concern of providers. To stay competitive, one wireless carrier wanted to gain a greater understanding of their customers to improve their marketing efforts and retain their current customer base. However, the company faced challenges with the ability to provide timely, actionable information and analytics with their existing technology systems.

The company decided to implement a scalable, analytics solution to provide customer insights in near real-time. In-memory technology supports data processing and analysis within seconds – taking advantage of the engine of next generation ERP systems. One of the carrier's marketing goals was to increase the number of customers upgrading to smartphone data plans. But understanding if customers responded to service offers took up to one week. The carrier's new platform shortened the time to 15 minutes, allowing the company to make more timely decisions on marketing offers. Generating other reports went from 10-15 minutes to 10-15 seconds. The marketing team is now able to run on-demand searches allowing them to interact with the data to discover new insights. The new system can also run analytics over 24 months of historical data, versus the previous system's three month window. This allows the marketing team to improve the accuracy of their predictions.

The results in the marketing department have encouraged the company to explore other areas for potential implementation of in-memory computing and analytics efforts – including mobile offerings to allow executives to access information on the road. By reimagining the capabilities of modern enterprise systems, this wireless carrier can deliver greater value to its customers and shareholders.

My take

Larry Frey
Chief Information Officer
EnPro Industries

This trend brings out the technologist in me and takes me back to my system programming days. But it's really the business implications that are important to me today – a better/faster/cheaper ERP engine allowing the business access to more and perhaps different capabilities. The underlying technology aspects – appliances, engineered systems, in-memory architectures, etc. – should be kept "underlying." If technology innovations (the new engine stuff) make my primary job delivering business value easier and more responsive, I'll take the time to assess and invest. Otherwise? Just keep the hood closed.

Having said that, I do appreciate any trend that can enable me to spend less time and energy on the question, "What is the next server we should buy?" or, "How do we make all of these pieces perform together?" and, instead, to spend more time answering, "How do we fulfill the new business requirement that generates revenue at a low cost?"

At EnPro, each of our business divisions operates in a way to effectively serve their customers. Each has its own set of products, customers, and suppliers. It doesn't make sense for all six divisions to operate a single ERP solution, as each one needs different things from ERP. Part of our growth strategy involves targeted acquisitions, which presents additional opportunities.

We've organized IT to respond to that. One team concentrates on commodity technologies, and the other focuses on business solutions. The business solutions team is not distracted by geeky architecture stuff, is primarily business analysts versus programmers, and concentrates on the importance of external experience and resources to deliver leading-edge solutions.

In addition, we prioritize our investment first into "orthodox" capabilities, which enable core operations of the company. My first goal is to deliver and maintain the orthodox solutions so that our company continues to operate like a well-oiled machine. Going beyond orthodox is not often required to achieve operational excellence. Then, on top of our orthodox capabilities, we may gain further competitive advantage by investing in "unorthodox" capabilities – those advanced or emerging technologies that allow us to deliver more to the business using targeted, leading-edge solutions. It's important to note that it's not only about faster or cheaper; it's also about better and easier.

Appliances and engineered solutions keep me from having to reinvent the wheel every time. They take advantage of what we call the "power of plenty" – an externally fueled marketplace of experience and innovation on which we can call. While it may be a little "back to the future" in terms of one-stop shopping, at the end of day I want to write one check for a solution that should work and perform.

My advice? Make sure you can deliver the table stakes before diving into the latest innovation. Focus on the needs of your business and bring in external experience when you need it. Take advantage of the emerging technologies that are able to enhance performance. Don't make a decision based on "cool" in-memory, engineered systems, or other technology factors alone. And, importantly, do whatever it takes to deliver value to your organization by delivering game changers – giving your business a competitive advantage.

Flying car future

ERP's recent history hints at where the industry will likely stand in five years. Pushes in the areas of usability and ubiquity are likely inevitable. Enterprise data and transactions will likely be available in many areas – with presence, but also with context. The former will likely become well-traveled ground, focused on access to ERP functions from mobile, social, and collaboration channels. The latter, context-awareness, is where the reinvented ERP engine becomes critical.

Advances in data compression, storage and memory costs, and distributed computing will likely allow real-time processing and analysis of internal and external data feeds – allowing action to be taken on intelligent signals gleaned out of torrents of noise. The cost of not monitoring physical operations is beginning to eclipse the cost of introducing sensors and actuators across assets – from facilities and equipment, to supplies and finished goods. Location awareness, digital identities, and the growing automation of business operations allow fine-grained knowledge of who's doing what, where. And social business' growth across the enterprise shines a light on who knows what and who knows whom. The nexus of these forces provides context to inform each action taken, each query answered, and each analytical model.

ERP's supporting infrastructure will likely allow for multi-tenant public cloud, cloud-based dedicated appliances (virtual private), and on-premise appliances for solutions in their catalog – as well as options for in-memory versus disc-based solutions. Vendor consolidation will likely continue, but a handful of players may remain, touting competing platforms for owning the new world of broad enterprise enablement.

Perhaps the most significant change? ERP is shifting from strict process automation based on scale and repeatability, to the orchestration framework for an agile, adaptable set of often-changing events. Pieces of the business will likely rely on highly automated, autonomous, predictive, and prescriptive analytical models. Others will likely rely on human insight and intervention, where tools are there to help knowledge workers visualize and explore complex or sensitive data. This presents a much different scale problem – where advanced intelligence potentially should be deployed against feeds, and is accessible by employees. Today's backbones would likely either crumble under the volume, or be financially untenable if conventional horizontal and vertical growth strategies were followed. Hence the need for a fundamentally different engine – built for outside-in integration, expecting unpredictable and intermittent growth, and capable of handling the exploding volumes of data and service interactions.

Where do you start?

ERP can be a sensitive topic in many organizations. And for good reason. Significant financial and political capital has been spent in getting to today's current state, with personal careers made (and lost) based on the outcome. It is likely the biggest single part of the IT landscape – influencing a big percentage of IT spend, and involved in an even bigger percentage of the business' operations. Reinventing any part of ERP should cause pause, and will likely draw scrutiny.

But that doesn't mean it shouldn't be broached. Vendors already positioning for the next potentially disruptive wave – one where TCO is transparent and hyper-competitive and ubiquity is expected. Markets are being displaced by companies where old problems are getting solved in new ways, new questions are getting asked and answered, and new businesses are being explored. Here's what you can do to prepare:

- **Experiment at the edge.** Explore opportunities to adopt revamped ERP engines in areas that surround your core transactional layer – business intelligence, analytics, or non-production landscapes. Additionally, use the adoption of the revamped engine to introduce new disciplines that may have immediate business impact, like creating new capabilities around unstructured big data to improve customer sentiment or sales force effectiveness.

- **Experiment at the core.** Explore opportunities for running core workloads on much less gear, making hot/hot and distributed self-healing architectures more practically affordable. Similarly, performance leaps in run times offer opportunities to rethink traditional limitations on batch windows, run book sequencing, and even business cycles. If forecasting, close-the-books, or MRP runs are 10x or 20x faster, how might you rethink your business processes to create advantage?

- **Version hygiene.** If you have hedged against technical upgrades and are generations behind the latest versions, now's the time to get compliant ahead of a business agenda that may require the new engine to fulfill the vision. Pure plumbing upgrades are possible. You can also take advantage of the need to touch the core to reach new features and potential – speed, ubiquity, and flexibility.

- **Evangelize.** Become the change agent of the "so what" by asking what the business can do differently and how the organization's mission can be better served. Understand the implications of the "what" and "how" so you don't oversimplify the migration effort or overpromise the expected outcomes. Vendors and partners can provide scenarios and benchmarks of potential business impact because of the foundational changes. Competitor and cross-industry examples are good, but rarely does something compare to a handful of impactful use cases from your own business.

- **Come to terms with competing viewpoints.** Today's leading vendors are placing nuanced but different bets. SAP on extensibility and ubiquity. Oracle on convergence and integration. The various cloud players on edge disruption bleeding into the core. Each is valid, and likely to achieve goals in the mid-term – and market conditions are unlikely to settle the debate and force anyone's hand. Which leaves the onus on the organization to gain visibility into vendor roadmaps, articulate their own business' vision into similar terms, invest where alignments are clear, and make intelligent bets where there is uncertainty.

Consumer Products Perspective – Reinventing the Capability Engine

One of the biggest pitfalls that may prevent the adoption of the new ERP engine in Consumer Products organizations is the oversimplification that this is just about people, process and technology. In fact, any discussion of "ERP engine" may even be viewed as a pure technology topic that is isolated from the business. The conversation should be more granular – the new ERP engine provides the opportunity to reinvent targeted business capabilities that include the following dimensions.

- Business objectives and goals
- Scope and scale
- Management and metrics
- Business process, policies and controls
- Organization and Talent
- Technology

Looking at any of these six dimensions in isolation or through some partial combination will almost certainly guarantee below average return from the new ERP engine. All facets are required to achieve the necessary change in behavior and metrics, as well as the realignment of the organization to operate effectively to leverage the new technology.

Therefore, even before we begin to talk about reinventing the ERP engine, we need to address some very fundamental questions: Do I have a "business capability perspective" when I assess any potential change in technology? Am I able to readily identify the implications to all the business capability dimensions? Do I have the Change Governance infrastructure to assess, prototype, implement and refine technology changes in the context of a business capability?

Bottom line

ERP's reinvented engine improves the process-driven ways of old, and enables the event-driven possibilities of tomorrow. Overhauled technologies allow cheaper and timely passage along the well-worn tracks of your existing automated processes. But technological breakthroughs suddenly mean industrial-grade performance can be coupled with maneuverability. This gives you more than efficiency and cost gains; it allows the underlying business problems to be approached in new ways. It allows access to data more efficiently, leading end-users to ask additional questions and explore new ways to exploit their ERP's data – and unlock the potential of their information.

Of course you can rationalize your infrastructure and application footprint. But the real questions are more strategic. What would you do differently if you could close your books in seven seconds instead of seven days? How would your sales strategy change if thousands of store managers could be individually executing daily sales forecasts[5]? What could you learn from real-time monitoring of the social-sphere interactions around your industry? The new ERP engines give you the tools to answer these questions and more.

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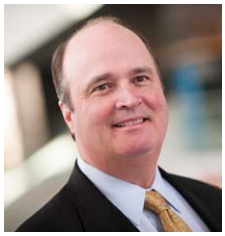

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Endnotes

1 Additional information is available in Deloitte Consulting LLP (2010), "Depth Perception: A dozen technology trends shaping business and IT in 2010", http://www.deloitte.com/us/2010technologytrends, Chapter 4.
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4 Case study: "Garmin International Inc. Improves Database Performance up to 50% by Consolidating onto Hardware and Software That's Engineered to Work Together", http://www.oracle.com/us/corporate/customers/customersearch/garmin-international-1-exadata-ss-1561598.html
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Conclusion

Faithful readers of our Tech Trends reports will find some familiar topics in these pages. The postdigital forces have seen extraordinary attention in the past four years – and each is still in the early stages of adoption. The book on how each can fundamentally reshape business is still being written.

Although the topics are familiar, the underlying trends continue to evolve at an astounding pace. Take mobile, for example. In 2010 the story was about ubiquitous connectivity and device (i.e., smartphone) advances. In 2011, the focus was on the "app" – and the advent of the tablet. In 2012, we covered enterprise implications for prioritization of opportunities, as well as the operational realities of governing, managing, and delivering mobile solutions. And now in 2013, we consider mobile's place as an utmost strategic priority. The very notion of "devices" is exploding into near-ubiquitous connectivity of many physical objects. The fundamental element of mobile still applies – the innovative idea of removing limitations based on physical location, and of a truly untethered enterprise. But the supporting nuance and details are moving at a rapid clip, making it paramount for IT executives to keep pace with change.

Postdigital's potential can spur both offensive and defensive responses. On one side lies opportunity for innovation. On the other, the existential threat of disruption. Every industry may be affected by the underlying digital forces. Every market may be reshaped by their controlled collision.

Who will lead the charge? The reports of IT's demise may be exaggerated, but there is often truth behind the rhetoric. How will CIOs reimagine their roles in business strategy? What will the corresponding IT department look like? One thing is for certain: the elements of postdigital will play a foundational role.

We close this year's report with the familiar quote from futurist William Gibson: "The future is already here…it is just not evenly distributed." Our hope is that the Tech Trends reports will help you discover the elements of postdigital in your enterprise.

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