GOODBYE
ENTERPRISE SOFTWARE
Hello
BUSINESS APPS

K2®

LISTEN
UP, executive leaders, IT professionals, software developers and business managers.

The era of enterprise software dominance is mercifully nearing its end. Business apps – fast, flexible, easy-to-build applications that streamline work and pull your information and systems together – introduce an entirely new way to deliver viral efficiency.

FOR BETTER *and* FOR WORSE

enterprise software has expanded its footprint at a staggering clip over the past few decades, reaching $278 billion in 2012.[1]

This number includes enterprise application software totaling $119 billion (ERP, CRM, BI, etc.), as well as infrastructure software (database management systems, middleware and custom application development) totaling $159 billion. Though accounted for separately, these two markets behave almost symbiotically — each fueling the other's growth and dependency on one another.

Packaged enterprise applications are inherently inflexible, they place a stranglehold on important data and have left business processes in a state of constriction. In the meantime, custom application development and middleware, while bridging process gaps within organizations, is expensive, inefficient and often hugely painful to maintain — especially as technology and software environments change.

Enterprise software seems stuck in stasis with no clear path to a virtuous cycle that would achieve innovation *with* efficiency, power *with* flexibility, and integration *with* simplification.

GOOGLE 'NGRAM'
PUBLISHED BOOK KEYWORD PRESENCE FOR
"ENTERPRISE RESOURCE PLANNING"

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008

GOOGLE "ERP" SEARCH TRENDS
INTEREST *over* TIME — THE NUMBER **100** REPRESENTS THE **PEAK** SEARCH INTEREST

100 80 60 40 20

2005 2007 2009 2011

GOOGLE SEARCH TRENDS
"BUSINESS APPS"
INTEREST *over* TIME — THE NUMBER **100** REPRESENTS THE **PEAK** SEARCH INTEREST

80 60 40 20

2005 2007 2009 2011

All hope is not lost, however. There is a reality where these things can co-exist. The future of enterprise software will be made up of fast, flexible business applications that deliver no-compromise solutions for a new world of work.
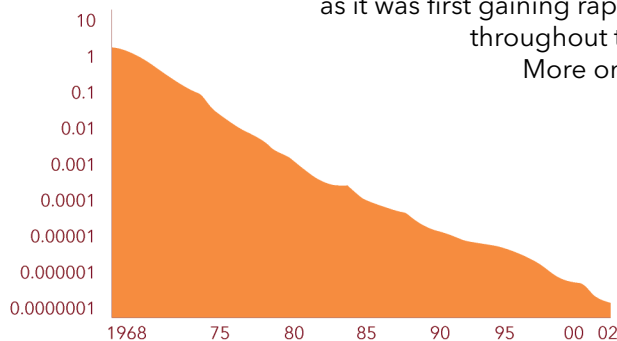
To get there, we need a solid understanding of where we've come from, where we've been and where we're going.

A LOOK BACK

The term ERP (enterprise resource planning) was born in 1990, first coined by Gartner.[2] Its roots were in manufacturing and aimed to drive efficiency and cost savings in supply chain logistics. The realized benefits were near immediate for organizations with low to no software automation.

But enterprise software's destiny as an outmoded vehicle for enhanced productivity and business agility was evident then, even as it was first gaining rapid traction throughout the 1990s. More on this later.

Here's how enterprise software rose to prominence: During the '90s, computing power expanded exponentially while hardware prices dropped dramatically. It was the perfect storm that enabled enterprise software to make great strides. Because, while these applications attempted to solve herculean business problems, they also required equally herculean capacity to crunch large volumes of data and billion-line code bases. The newfound affordability of RAM capacity and CPU power meant that these heavy-coded applications could run with relative avoidance of memory overloads and crashes that were previously a barrier to widespread adoption.

Enterprise software first began its march into the workplace at the largest organizations – those that were the heaviest investors in internal IT staff and infrastructure. And as hardware and software began to enjoy efficiencies of scale, running these software programs became more affordable to smaller companies and organizations with limited IT resources. The age of enterprise software had dawned.

The looming imminence of Y2K created added urgency, and corresponding price inelasticity, for companies to rip and replace legacy systems by the end of the decade. ERP systems and the vendors that built them (or the companies that built services around them) were the primary beneficiaries.

PRICE PER *Transistor* (in dollars)
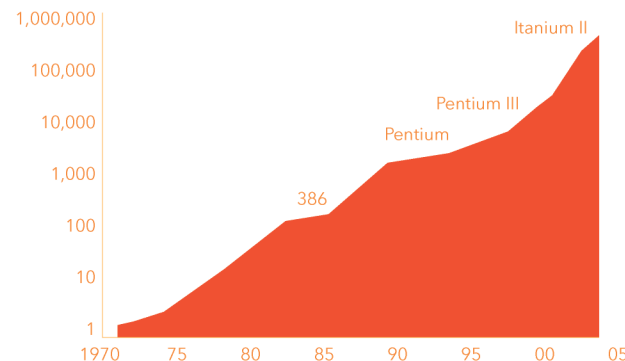
TRANSISTORS *per chip* (thousands)

A LOOK BACK

continued

Major enterprise software players saw their customer base grow and their revenues swell.

IBM's stock increased almost fourfold from 1990 to 2000, HP's nearly 9x, Oracle 48x and Microsoft over 97x. SAP, a growing giant and early pioneer of ERP, saw its revenue during this decade grow from 500 million DM to 5.1 billion EUR — a currency-adjusted increase of nearly 20x. The need for integration soon followed and quickly became the new buzz du jour as enterprise software's sprawl continued.[3]

With fresh war chests of cash, ERP software vendors aimed to own the "enterprise stack," and ERP expanded its definition as vendors aggressively moved toward horizontal integration through acquisition. Vendors with technologies in other core back-office functions, such as financial accounting, human resources management (HRM) and product lifecycle management (PLM), were all on the takedown list. And it didn't stop there. The front office quickly became a target, with customer relationship management (CRM), supplier relationship management (SRM) and e-commerce solutions being developed or acquired into the ERP stack.

Enterprise applications had gone mainstream, seemingly overnight.

Stock Price
1990 *to* 2000

| MSFT +9692.81% | ORCL +4849.77% |
| HPQ +897.25% | IBM +352.42% |

10000 %
8000 %
6000 %
4000 %
2000 %
0 %

1990 1991 1992 1993 1994 1995 1996 1997 1998 1999

Cracks
EMERGE

But while early ERP was designed with the noble (and ambitious) goal of "facilitating the flow of information between all business functions inside the boundaries of the organization and to manage the connections to outside stakeholders,"[4] the outcomes didn't always deliver.

ERP had ballooned into a hodgepodge of acquired enterprise technologies, and integration required extensive infrastructure services and customization. Instead of creating bridges, ERP and enterprise software systems had created walled gardens that, in isolation, worked adequately for their intended purpose but, in aggregate, were islands unto themselves.[5]

A new solution area and industry was eventually born from this sea of discord. Enterprise application integration (EAI) emerged as a response to the challenges of disjointed data and application silos. A whopping $20 billion was spent on EAI in 2012 alone.[6]

Yet, even EAI was (and is) rife with issues of its own. In fact, more than 70 percent of EAI projects cite failure due to, among other challenges, the fact that environments are in a state of constant flux and require ongoing integration work just to keep up.[7] And this issue

isn't going away any time soon. Gartner forecasts that by 2018 more than 50 percent of the cost of implementing 90 percent of new large systems will be spent on integration.[8]

All because valuable data is trapped in silos.

IT organizations are faced with a dilemma. Should they centralize and standardize their enterprise software architecture on horizontally integrated ERP, or should they opt for best-in-class line-of-business (LOB) systems and custom

software? There are implications to each.

Big ERP packages arecostly, implementation and process reengineering is time consuming, there are extensive training costs for both employees and IT, and overcoming organizational resistance to change is seemingly

insurmountable. Plus, these systems are inflexible and difficult to truly customize.[9]

On the flip side, maintenance and upkeep costs for multiple, distributed line-of-business systems are high, and fragmented and isolated data and systems are more difficult to integrate with one another. This environment also creates deep migration pains whenever upgrades to the software or the environment are required.

Organizations are seemingly forced to make an all-or-nothing decision about their enterprise's central nervous system(s). And none of the options are ideal.

CUSTOM HRM PLM CRM ERP

IT
HR
Finance
Marketing
Sales

IT
APPLICATIONS
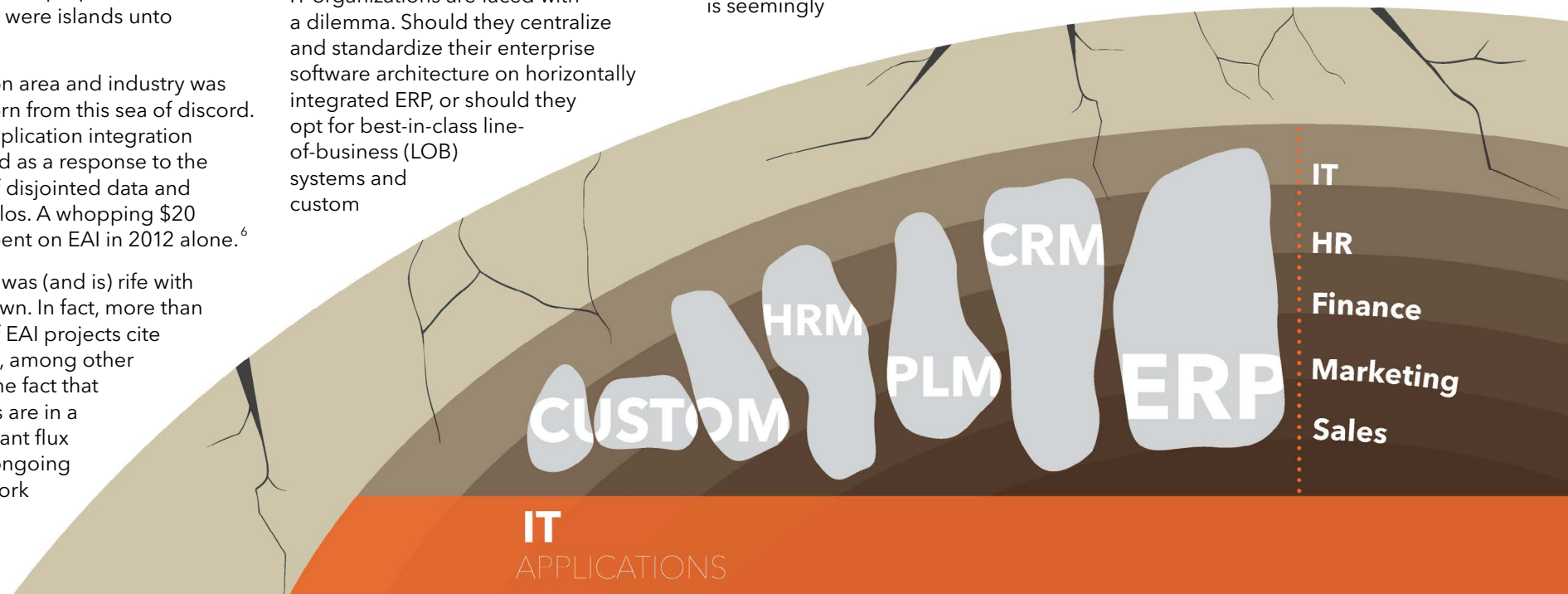
THE
CARNAGE
BEGINS

The history books tell us that most organizations opted for a center-heavy model, largely because IT of the day saw ERP as a better power play than the alternatives.[10] But inherent issues with this topology proved to cause problems — massive, in some cases:

- In 1999, Hershey Foods's problems with its $112 million investment in SAP's ERP, Siebel CRM and Manugistics supply chain applications prevented it from delivering $100 million worth of Kisses for Halloween and caused the stock to dip 8 percent.
- In 2000, Nike's $400 million upgrade to its supply chain and ERP systems resulted in $100 million in lost sales, a 20 percent dip in stock prices and a handful of class-action lawsuits.
- In 2004, Hewlett-Packard was impacted by $160 million in order backlogs and lost revenue (more than 5x the project's estimated cost).
- In 2005, Waste Management sued SAP for its so-called "fake" ERP revenue management software that wasn't delivering on its promises.
- In 2008, Select Comfort's multi-module implementation of SAP's ERP, CRM, supply chain and other apps resulted in eventual shareholder pressure to put the $20 million project on hold. [11]

These failings were the result of a gross underestimation of the challenges and complexities in delivering organization-wide change management software. Unfortunately the challenges in these examples were not unique. Enterprise software adoption is often painful and slow, integration is expensive, and the end result is a rigidness that can stifle agility and innovation. [12]

Hershey's CEO adeptly summed up these challenges: "Enterprise software is hard. It takes a long time. It's hard to get people to change the ways they work so that the system will function correctly. But they eventually adapt. And you will have problems in your business at first because enterprise software isn't just software. It requires changing the way you do business." [13]

Still, there was a silver lining. Even with all its pains and shortcomings, enterprise software played an important role in digitizing early business processes. It helped ring-fence important data that needed to be captured and mobilized as the underpinnings of efficient process creation, in order to make better visibility and decision-making possible.

But to unleash process innovation across organizations, power would need to be wrested from a centralized IT function.

A SEA change FOR IT

On June 29, 2007, Apple introduced its first-generation iPhone. With an onboard CPU clocking in at 400MHz, the device was more powerful than most desktop and laptop PCs built just five years earlier. The compact power of these devices, combined with a sleek user design and intuitive interface, helped spur rapid adoption.

Just four years after its initial launch, the iPhone had sold more than 150 million units.

At the same time, the Web was erupting with powerful SaaS-based applications that came with low barriers to entry and highly useable interfaces. Suddenly, employees were sharing files on Google Apps and Dropbox and storing content in Evernote. More powerful applications like Salesforce and Eloqua had already established beachheads within sales and marketing business units.

Technology consumers (rather than IT) were bringing technology into the workplace, and end-user expectations of technology (its accessibility, power and ease of use) had established a new baseline – one that was beyond what most IT organizations were capable of delivering. [14]

The forces of consumerization had descended upon IT, and with it new demands for access to technology and data for everyone – at any time, from anywhere.

Business units and business owners were calling the shots, and IT was losing control. In fact, for business process solutions specifically, a 2012 Capgemini Global survey found that less than 20 percent of funding for these initiatives came from IT budgets. [15] One study by the Corporate Executive Board (CEB) boldly predicted that by 2015 the IT function would "bear little resemblance to its current state" and that "many activities would devolve to business units, be consolidated with other central functions […] or be externally sourced." [16]

And while enterprise software had become firmly entrenched in the majority of environments, traditional IT, as it existed within those organizations, would never be the same.

The new role of IT would be that of an enabler and partner to business units, one that creates new value in a collaborative way, where data and the systems that hoard it are open and accessible, and where applications put people at the center.

CUSTOM   HRM   PLM   CRM   ERP

IT
HR
Finance
Marketing
Sales

IT APPLICATIONS

LOB APPLICATIONS

THE **RISE** *of the*
BUSINESS
APP

Before we explore the anatomy of a business application, it's necessary to understand what is fueling the need for the next generation of software:

- More than ever, business must move fast. The more that manual processes can be moved to autopilot, the better. And solutions shouldn't take long to build. Multi-year and multi-month software projects won't cut it.

- Solutions must be agile. The market changes, customers are finicky, competitors are nimble and technology is constantly evolving. Software must keep up with this pace of change, and it shouldn't result in a rip and replace of existing solutions.

- Barriers must be eliminated, and users must be given access to information and expertise when it's needed, in order to make optimal decisions.

Business applications fill the gaps where enterprise software fell short. They enable a new reality where technology solutions are imagined and built by the people who need them, and then reimagined and recreated as business needs change. They are inherently designed for a new world and culture of work — one that is distributed, empowered and collaborative.

The Anatomy of Business Applications

Off-The-Shelf Business Applications Are Moving Toward Digital Business Design
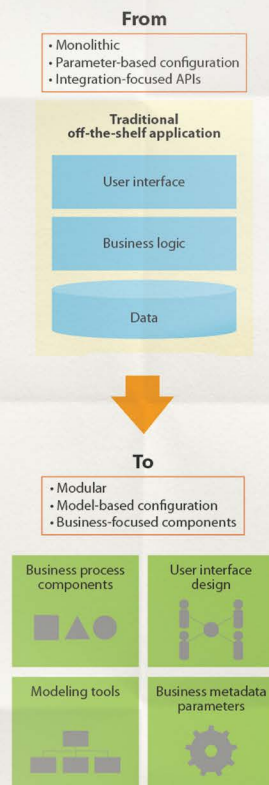
Forrester: November 2012
"Digital Business Design Is The New Integration"

Instead of being created under the old monolithic paradigm with parameter-based configuration and integration-focused APIs, business apps are inherently agile, created to be modular, with model-based configuration and business-focused components.[17] Forrester calls business applications "the technology heart of today's enterprises" and the lynchpin of "digital business design." [18]

Modern business applications overcome the shortcomings and challenges associated with fully packaged enterprise applications and their often superfluous or complex feature sets, unfriendly user interface and design, and inflexibility. Of course, custom software development is capable of averting some of these issues, but at a significant cost. The development process is inefficient and slow, and it excludes business architects and project sponsors from collaborative involvement in the build phase.

Business application platforms leverage the power of existing investments without the pains of custom software development. They allow for rapid and collaborative composition of process-driven solutions that are highly customizable. These apps can be applied to nearly any type of business processes, and they meet the varying needs of unique environments.

Seamless integration with existing LOB applications and access to their underlying data sources, whether on-premise or in the cloud, is an increasing need for most organizations. Gartner predicts that by 2016 midsize to large companies will spend 33 percent more on application integration than in 2013.[19] Achieving integration, while still retaining the security and integrity of underlying sources of information, is a hallmark of business applications.

Unlike their legacy and distant enterprise application ancestors, business applications are designed with the end user in mind. They deliver information and capability in the context that each person needs to interface with the application — and all on one screen. Whether the user is remote or onsite, accessing business data from a mobile device or tablet, information can be served up and acted upon in real time.

But it's still not enough for data to be surfaced, accessible and coherent. In order to truly impact business change and drive process improvement, data must also be made useful, and in order to do that, it must be put to work.

Business process management (BPM) software has historically filled this role, but process automation and workflow, in and of itself, falls well short of the holistic needs of today's organizations. Businesses must be able to act fast, and alter course quickly. Companies must empower their people to collaborate, make quick and informed decisions, and make the adjustments necessary for business to succeed. Forrester has defined an entirely new category of software called "smart process applications" (as an extension of traditional BPM) to describe technology that will address this need. The analyst predicts this market will reach $34 billion by 2015 and that the growth expected here will come at the expense of traditional custom software development. [20]

That's because software development, while delivering the most custom-fit solutions for enterprises, is slow and costly, and it comes with a high burden of ongoing support and maintenance. When the software environment is upgraded or changed, the code must be altered to fit the new customizations. Good developer talent is hard to find and retain, and there is overhead associated with aligning business requirements to development timelines.

THE ANATOMY OF BUSINESS APPLICATIONS
VOLUME 2

K2®
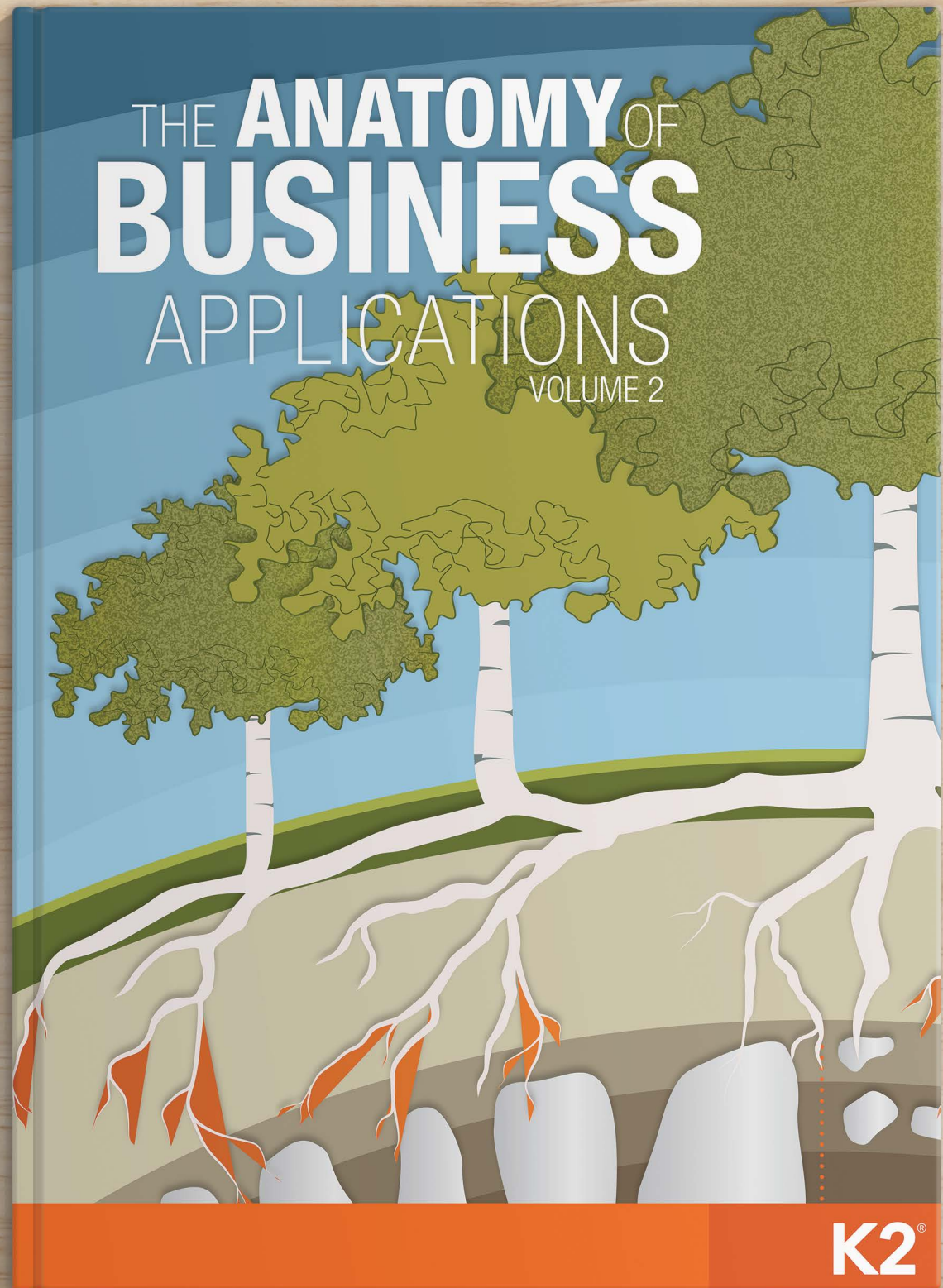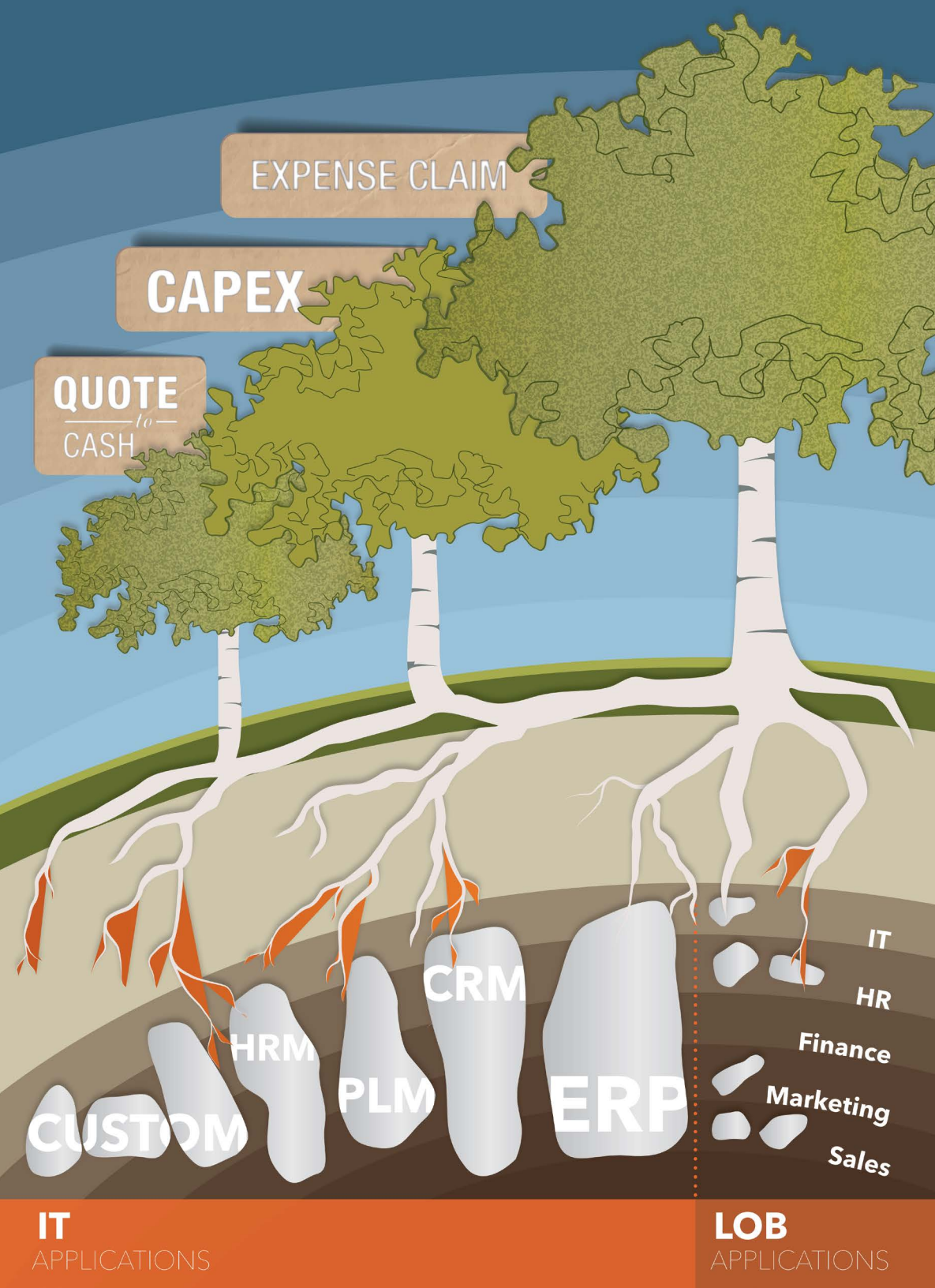
Business application platforms circumvent these impedances by allowing apps to be built quickly and without code. Through declarative code models, business analysts and traditional developers, alike, are able to build powerful applications and roll them out fast.

Moreover, business applications are intrinsically designed with agility and flexibility in mind. Because they are made up of pre-defined data objects, form views and actions, subsequent apps can be assembled even quicker than the first – with reusable modular assets – and they can be changed on the fly without impacting application design or infrastructure.

They also put people at the center by eliminating the need for end users to access multiple applications and interfaces to get work accomplished. A single interface, that is purpose-driven and customized to the specific task and user at hand, enables more efficient transactions and eliminates waste and bottlenecks within a given business process.
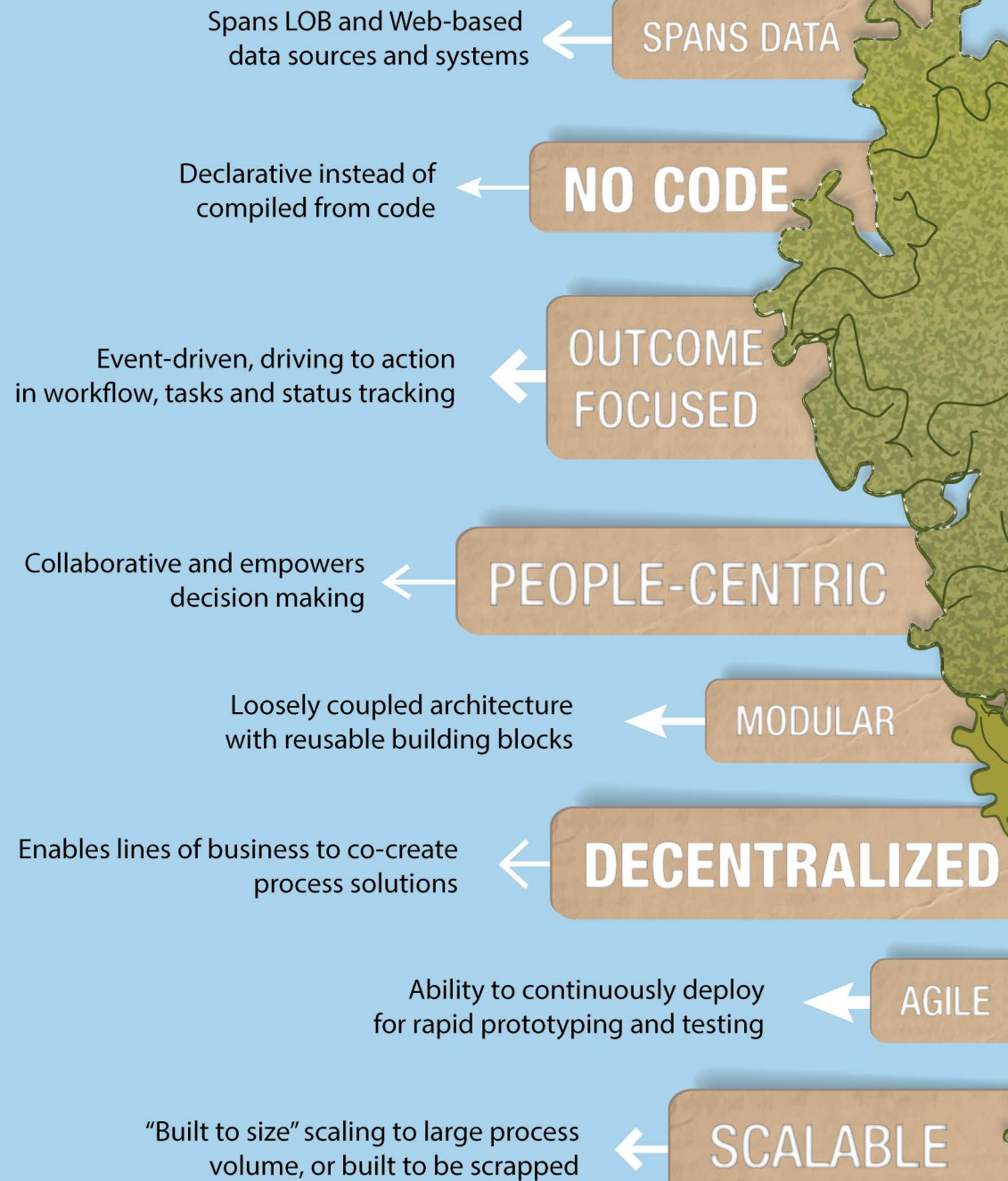
A NEW TOMORROW, TODAY

Business applications have the power to span an organization, drive business outcomes and deliver true competitive advantage. They can be rapidly built, easily adapted and are powerful enough to scale across siloed business systems and data.

K2 customers are deeply familiar with the challenges of traditional enterprise software. In the face of what may seem like sheer impossibility, our customers are challenging expectations and delivering K2 business apps that are driving real business impact.

Today, the K2 platform is used by more than 2,500 organizations in over 80 countries. K2 business applications are powering the enterprises of tomorrow with process innovation today.

SPANS DATA ← Spans LOB and Web-based data sources and systems

NO CODE ← Declarative instead of compiled from code

OUTCOME FOCUSED ← Event-driven, driving to action in workflow, tasks and status tracking

PEOPLE-CENTRIC ← Collaborative and empowers decision making

MODULAR ← Loosely coupled architecture with reusable building blocks

DECENTRALIZED ← Enables lines of business to co-create process solutions

AGILE ← Ability to continuously deploy for rapid prototyping and testing

SCALABLE ← "Built to size" scaling to large process volume, or built to be scrapped

To learn more about business applications,
please visit us at **K2**.COM.

To download the Forrester report referenced in this paper,
please visit FORMSon**DATA**.com.

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[18] Forrester defines Digital Business Design as "[a] business-centered approach to solution architecture, implementation, and integration that brings business and technology design together by placing design priority on user roles, business transactions, processes, canonical information, events, and other business aspects that embody a complete definition of a business."

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