

WHITE PAPER

ENTERPRISE RESOURCE PLANNING IN A
SERVICES-ORIENTED WORLD

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Overview



The 2000's has become a battle to win communities and this has moved the value focus of computing out of the data centre and into the portal...

In the 1990's, the common definition of 'best IT' was 'best ERP system'. IT leaders were encouraged to believe that one system could be procured and deployed to support all essential business continuity processes of the enterprise whilst at the same time provide a single version of the truth. That was then. The 2000's has become a battle to win communities and this has moved the value focus of computing out of the data centre and into the portal where people networks and the consumption of knowledge are the winning tickets.

This paper examines the changing role of Enterprise Resource Planning.

The battle for communities

For most businesses, the 21st century has become a battle for hearts and minds; a battle for communities. Whether the driving force is to reach out to and win new customers, work more closely with industry partners to achieve common goals or source new talent and new ideas from a shrinking talent pool, organizations are under pressure to be the best at harnessing communities of people. In this race, data remains the critical weapon. But traditional perspectives of enterprise computing are not only at odds with this ethos, they often stand between the organization and its new priorities.

The ERP holy grail

When they first arrived on the scene in the 1980's, the promise of vendors was ERP systems could provide a single version of the truth spanning the entire enterprise information management architecture, and bag full boiler-plated processes that would bring any business tangible benefits through process optimization.

The perfect prescription for operational excellence?

ERP systems arrived at a time when the management concept of enterprise performance was closely coupled with operational excellence. Books like 'In Search of Excellence' by Thomas J. Peters and Robert H. Waterman Jr. were doing the rounds in management circles preaching the gospel of 'mechanization rules' and exemplifying through case stories how managers could organize their people through more robust process models. The 1980's was the decade ERP appeared to be the perfect prescription to boost productivity in the office by formalizing who does what when and capturing data at the earliest point in a process.

There can be no doubt that for some organizations the majority of users have been better served by the adoption of a common core business information platform. But the business impact of ERP has been far from miraculous.

More than one system

The promise of ERP was that organizations could operate a single integrated computing platform to serve their business information management needs.

In reality, ERP systems today commonly serve less than half the information needs of the enterprise and hold less than half of the corporate information assets essential to business success – a proportion that is declining still further. IT leaders bent on creating a single harmonized IT universe find their plans crushed as their organizations decide to acquire, merge or collaborate with other businesses that operate vastly different systems. When the Mecca of 'a single system and single version of the truth' looks moments away, the dream is stolen by broadening business demands for collaboration and outsourcing.

Contributing towards the demotion of corporals

The headlong charge for mechanization of processes ignored the critical role that *leadership at all levels of the enterprise* has in business success. In the 1980's business leaders were convinced that deeper process automation would eradicate imperfections in processes caused by human error. The Quality Assurance Manual became the new gospel of business and articulated how the enterprise worked. Systemic automation of processes by implementing ERP software would be the herald of change and nothing would stand in its way. The consequence of this strategy is that most organizations now lack competent 'corporals' – leaders that exist at departmental and team level within the enterprise with the creative skills and experience to adapt to change at departmental level in order to achieve

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higher level business strategic goals. The human face of these actions is experienced by customers and partners – poor customer service resulting from a lack of adaptability of processes that directly leads to a lowering of customer value. For example, consider the experience of phoning a call centre and asking for a service that isn't on speed-dial. The likelihood is that customers will be forwarded to a customer service representative who is unable to offer any service resolution beyond the automated scripts on their computer monitor. And should resolutions require the involvement of other departments, it's most likely that the call will be transferred to a new point of contact and the ownership of problem resolution remains with the customer. Adapting processes by learning from these experiences is very difficult without perceptive 'corporals' who have the authority, information and skills to take charge.

Historians now believe that the success or failure of military campaigns has much to do to the ability and encouragement of lower-ranking officers to take the initiative and lead small teams of soldiers to overcome the challenges they faced in the field as they happened. Without innovative and talented section commanders to deal with emerging situations, as battlefield communications breakdown armies quickly became dysfunctional.

Compromising agility

ERP systems have proved difficult and costly to adapt to business needs and conditions. All major systems require programming skills to adapt them. Creating new processes can take months to implement and adapting them to meet even minor compliance and accounting requirements can cost many thousands of dollars. Even installing ERP systems has often had an enormous negative impact on organizations.

When the European function of a global electronics manufacturer deployed its ERP system in 2006, it took three years to get the core system operating smoothly and even then country operations complained that they couldn't transact business 'the way their customers wanted them to because of an absence of service product codes. When customers wanted to bundle products into managed service offerings, the ERP system couldn't support the complexity of accounting country operations were accustomed to with their previous country-specific accounting solutions.

The presumption business leaders had when implementing ERP systems in the 1980's was that it would simplify the harmonization of computer systems...

System complexity

The presumption business leaders had when implementing ERP systems in the 1980's was that it would simplify the harmonization of computer systems. Yet ERP has proven to have little effect on the front-office and the creative processes that drive customer value. Still today, large organizations operate enormous computer systems and do not always have the level of control over programs and systems they would like.

A survey of 163 companies that had implemented enterprise resource planning systems conducted by Accenture in the early 2000's found that the mean number of instances (separate and distinct implementations of the same software across regions or business units) was eight, with 32% having implemented from six to more than 20 distinct instances.

Such fragmented implementations results in disparate, disconnected sources of operational information.

Doing IT to people, not *for* people

Empirical evidence suggests the impact of 'IT imposed' ERP process automation is to transfer accountability of information management performance away from process owners to the IT department.

Empirical evidence suggests the impact of 'IT imposed' ERP process automation is to transfer accountability of information management performance away from process owners to the IT department. A blame culture emerges towards failure of IT when many of the causes of failure have to do with its poor 'fit' to business needs. Deployment of large scale IT projects over the last 30 years has shown that 'doing IT to people' (i.e. When IT departments take accountability and ownership of project outcomes, defining scope of use and success) reduces functional accountability and prohibits a culture of curiosity in the way processes work today or should work tomorrow.

Organizations like financial services firm Investec in South Africa that have asked their people to come up with their own processes based on business needs have surprisingly found that the process models they end up with are at odds with the imposed processes, were significantly less complex and work better at lower cost. In addition, processes are more adaptive to change because managers and contributors are fully aware of the reason WHY process steps are taken and can therefore question their validity. According to Investec this has lead to more double loop learning (ie. Doing better things rather than doing things better).

Garbage in, garbage out

Data quality continues to be the ERP value killer. Half a century of enterprise computing has done little to address the fundamental problem of data quality and enrichment.

Data quality continues to be the ERP killer. Half a century of enterprise computing has done little to address the problem of data quality and enrichment. The challenge of keeping data current in IT systems was best articulated by Nancy Rybeck, global data warehouse architect and data administrator for Emerson Process Management in her online article for Information Management titled 'The Bane of CRM: Data Quality' where she states, "Quite frankly, most sane people don't find cleansing data any more fun than cleaning the toilet."

Maintaining data quality is the mucky end of computing that nobody wants to be associated with but has arguably the biggest influence on usefulness and value.

IT analyst firm Bloor estimates that 84% of data migration projects within large-scale ERP projects have failed, overran their budgets, or both.

A report by The Data Warehousing Institute in 2002 suggested that problems keeping data current cost businesses in the United States more than \$600 billion per year. Findings were based on interviews with industry experts, customers and survey data from 647 respondents.

Whilst harvesting data from beyond the walls of the enterprise serves to enrich the quality of data, maintaining the data quality of core systems remains a key challenge for IT managers and a strong reason why control over core systems must remain with seasoned IT professionals.

A new concept of excellence in enterprise computing

Business computing grew up to serve the silos of operation that existed in organizations at a time when it was okay to have silos. It supported the status quo where departmental heads could retain their status around the boardroom table by owning 'a piece of the enterprise' and any asset relating to their domain. Enterprise Resource Planning (ERP) software systems encouraged this siloism by offering shrink-wrapped process automation solutions for the finance manager, HR manager, logistics manager and sales and marketing managers (CRM). While every department could be assured that ERP systems improve the performance of the processes each department head, there were sweets enough for everyone to encourage a spending spree on ERP systems. What has changed to shatter this panacea model of corporate computing was not the performance of IT departments to deliver ERP (though it has proved to be expensive and difficult to adapt), but the environment of business. Globalization, the Internet, more demanding and individualistic consumers, an always online markets and the hyper growth economies of Asia – all of these factors have forever changed the landscape of business so that business leaders must now re-evaluate their strategies every year rather than every 10, 20 or 50 years. Agility has become the watchword of business.

A 2006 survey by the Economist Intelligence Unit of 336 senior corporate executives, one quarter of whom were CEOs, found that 47% of respondents anticipated major changes to their business model within three years. Hyper-competitive global markets of the 21st century demand a kind of organization that thinks and behaves differently.

As business success increasingly depends on the ability of the enterprise to always fit its most competitive markets, demands for agile information management processes inevitably fall at the door of IT leaders who find themselves asked to change the course of their information management systems developments minute by minute in response to new business situations (akin to standing on the bridge of an oil tanker with minimal steerage and scant room to manoeuvre). The role of ERP systems has been caught up in a boardroom crossfire resulting from an unprecedented shift in the *concept of excellence in enterprise computing*: a move from 'best system and boiler-plate processes' to 'the most adaptive and supportive of change'.

ERP systems encouraged siloism by offering shrink-wrapped process automation solutions...

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Re-thinking enterprise logic

The mechanistic management beliefs of the 19th century sustain in many organizations; the core logic of the enterprise being that productivity at all costs is king that emerged in the industrial age. Leaders and managers think of people as cogs in a machine composed of production line workflows, an 'economic engine' fuelled by transactions processed at the lowest cost to produce the highest potential value. (The huge risk is *the business* ignores the broader talent potential of workers, leaving workers feeling undervalued because they can't leverage their full 'talent value'.)

"Many organizations haven't changed the way they think and work in decades. Exposing these issues and finding a route to greater levels of agility is something most corporations can benefit from." James McNerney, CEO, Boeing.

This perspective or organizational 'thinking and acting' is increasingly at odds with the modern world.

Globalization

The global marketplace has hit the business world on many different levels. Most obvious is the drift of economic growth towards the emerging economies of China and India (with one eye on the sleeping giants of Russia and Africa). It's thought by the middle of this century India and China might well be producing 80% of the world's consumer products. For major corporations of today, globalization means making sure they have a share in high growth markets. It means hugely scaling organizations to lever corporate talent assets on a global stage. Very often, it also means mergers and acquisitions to scale organizations to compete in a world of corporate titan brands.

Some of these global brands are emerging from the Far East. HTC Corporation is an example of a new generation global corporation that has leveraged its component manufacturing of processors to grow into the fast growing mobile phone industry. Now HTC competes with the biggest phone manufacturers around the world. The presumption that emerging economies will settle for being 'cheap' places to manufacture is proving to be flawed logic. In all industries, corporations from India and China are innovating.

In a survey of Chinese and U.S. manufacturers by Industry Week, 54% of Chinese companies cited innovation as one of their top objectives, compared with only 26% of U.S. respondents. Today, Chinese companies spend more on worker training and enterprise management software than their Western counterparts.

Human cogs that don't fit anymore

Opportunities to cut human data entry costs and streamline processes have all but eradicated the use of people in administrative roles where systemization is possible. The refined role of information workers in business today is to engineer

change, inject ideas and sustain key processes that demand high levels of competency. But 'Generation Y' (the young people leaving education today) is not happy to commit to a lifetime of employment with one employer. Registering that employers are no longer able or prepared to promise a job for life – and buoyed by the demand for information worker talent – Gen-Y is looking for a new deal and the opportunity to focus on their specialist work role rather than have their work-life compromised by having to fit into the confines of a job role. Employers who fail to lever a higher proportion of the talents of individuals risk losing that talent. This is driving demand for social operating systems in business and new 'social' ways of working.

A global war for talent

For various reasons resourcing of talent is becoming a growth threat. Today, profitable organizations see a concerning dichotomy: a spiral of demand for talent to fuel innovation and competitive advantage is happening in an era where generations of experienced workers are retiring. A global opportunity for knowledge workers 'without borders' means scarcity of talent is becoming a major threat to business success.

The more scarce skilled workers become the more corporations battle for the best people. Indian companies surveyed by The Economist reported that over 50 percent of their employees had been contacted by another organization, resulting in a 40 percent turnover rate.

Information consumerism

The 21st century has become an era of *information consumerism*.

The modern weapons of commerce – the Internet, advertising and brands – are shaping the values and beliefs of individuals. In a chicken-and-egg way, a new vehicle for communication changes society that in turn impacts the way people want to communicate. And so it goes on. The digital age means that in large parts of the Western Hemisphere, individuals have instant access to news through digital TV and radio channels and on the Internet. With the emergence of participative technologies and social operating systems, these individuals can have even greater influence over buying decisions and brand behaviors.

Society and business are increasingly bound by a digital cloudspace that shares the thoughts, opinions, and passions of a global online community.

Society and business are increasingly bound by a digital cloudspace that shares the thoughts, opinions, and passions of a global online community. It is forming a market-place of intellect and talent; a global meeting place for a generation born of computers and giving the Internet its conscience. Influencing the growth in information consumerism are increasing levels of computer literacy in young people. Corporate computing has fallen behind technology innovation in the consumer space – so much so that most new innovation in software development – digital media, mapping, social networking, e-commerce markets, language translation – are fuelling by demand coming from online consumer communities.

In January 2009, Toronto-based research firm Harris Decima surveying Generation Y workers about their attitudes towards technology. In their report 'Freedom to Compute: The Empowerment of Generation Y' they stated that approximately 69 per cent of the more than 1,000 people surveyed in said they regard themselves as highly proficient computer users. This was particularly true among those between 18 and 29 with postgraduate degrees, 80 per cent of whom said they were highly proficient. The author of the report states, "Proficiency in this group is thought of in terms of usage and customization - not software development".

The ideological transition of enterprise logic is slowly being exposed through changing business behaviors and an evolving role for IT:

The idea of getting a 'pure Oracle' or 'pure SAP' unified system becomes unachievable when the pace of merger and adaptation means that no process or departmental silo is left untouched.

Near constant merging of systems and processes

Many business strategies demand that organizations or silos merge and this has an inevitable impact on the systems they use. The idea of getting a 'pure Oracle' or 'pure SAP' unified system becomes unachievable when the pace of merger and adaptation means that no process or departmental silo is left untouched and the probability of operating a business empire with a single pure blood ERP system becomes more of a pipe dream than an ambition.

Today organizations are serving broader information needs by giving workers access to online information services.

A new profile of data resources

At one time it was thought that up to 40% of corporate critical data was held on core database systems while 60% of data was likely to exist in the minds and laptop drives of information workers who serve themselves with information and who willingly support business processes by calling on contributions of effort and knowledge found in their social networks. Today organizations are serving broader information needs by giving workers access to online information services – systems like Googlemaps, Answers.com, LinkedIn, BBC, Met-office and other third party data sources - to access knowledge and cross-thread information to build new views of information. Could it be that in the next decade, information workers will access more data from outside of their organization than from within? Certainly it's likely as the volumes of data accessible to people from the Internet grows exponentially.

Federation of portal workspaces

People networks and processes are extending across silos and beyond the enterprise to serve the information needs of specialist communities. For security chief this means it's no longer is it possible to secure the outer boundary of the enterprise (there isn't one). Workers themselves want the ability to discharge their role no matter where they are. The growing popularity of home-workers and flexible-workers is putting even greater pressures on IT teams to extend networks, processes and IT systems beyond the Firewall.

Demand for federated portal environments is also coming from sub contractors, customers and industry partners who today want to share insights, performance metrics and project outcomes. An increasing number of individuals are choosing

to work as self-employed contractors. These highly skilled individuals are prized by employers who will work hard to service their information needs in order to retain their services.

The need for greater re-use of corporate data assets

The ability to improve decision making, workforce productivity and the effectiveness of processes by re-using corporate data assets is hampered by complex data architectures and the high cost and complexity of IT projects. The wall between the business and its IT function continues to stand. Faced with unhappy information workers who claim not to have seen a significant change in their productivity since the Spreadsheet, IT leaders are under pressure to find better ways of re-using corporate data assets.

Volkswagen has introduced a new role of 'process improvement manager' to embed IT skills into improvement teams. The introduction of this new role has helped Volkswagen to govern the continual improvement in processes by devolving IT responsibilities deeper into the business and to harness IT skills in a way that instils a sustained improvement agenda.

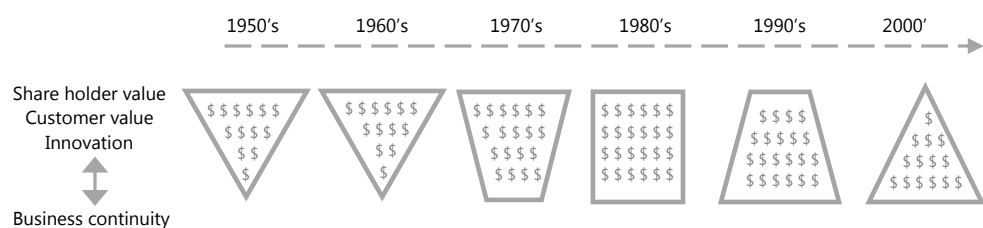
Re-discovering IT competitive advantage

With the continuity of systems expected as a 'given', IT leaders are today being measured on their contributions to drive process improvement and the achievement of corporate outcomes through technology innovation. Releasing capacity to achieve marked innovation improvements becomes the significant challenge.

In the early days of IT, even moderate expenditure in systems and software could generate highly visible returns to the business. Not today...

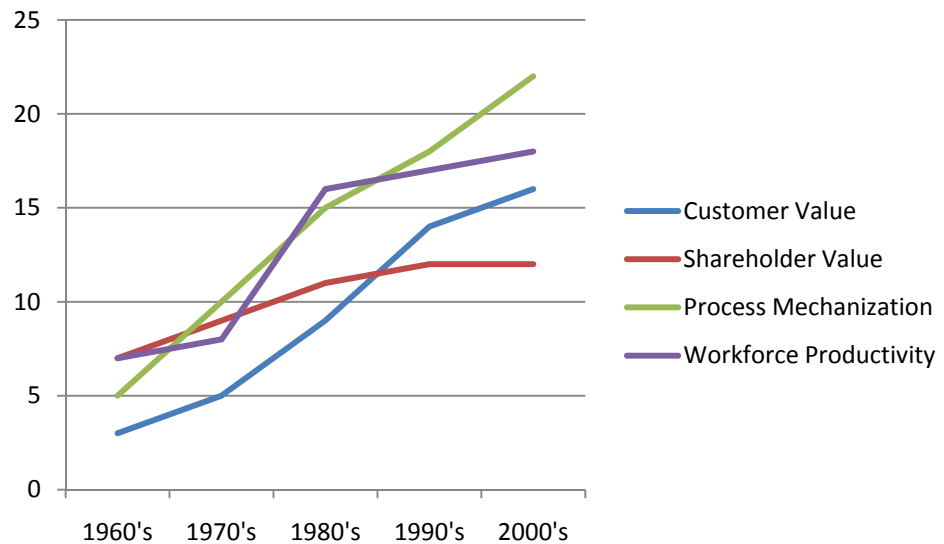
In the early days of IT, even moderate expenditure in systems and software could generate highly visible returns to the business. Newly automated business processes and information worker insights and tools made huge strides in delivering value back to the business; further bolstered by a reduction in head-count. But these rewards have lessened over time. Over the last decade - challenged by the complexity of IT software architectures, spaghetti hosting platform infrastructures and a steady stream of complex upgrades and enhancements - the size of IT budgets has skyrocketed without significant inroads being made into workforce productivity, customer value or shareholder benefits.

Over time, the competitive advantage derived from investments in IT has declined



Recent attempts to increase in customer value have been seen in customer service centres and online web portals. Organizations have invested \$millions in Customer Relationship Management systems and associated online strategies. But too great a focus on process mechanization with too little regard for the *human-centricity* of organizational design (i.e. honouring social processes, killing the corporals, the need to harvest talent, register the role of social networks, set behavioral standards etc.) has won incremental value in one area of customer value to the detriment of other areas of customer service quality and workforce goodwill.

Since the 1990's the level of shareholder value from IT investments has plateaued



Source: NDMC Consulting 2005: Illustrating the value of IT to the business:

Vanilla IT

Vanilla IT – Have IT leaders lost the will to seek out competitive advantage from IT systems?

One argument explaining why this has happened is that corporations have lowered their aspirations for technology and IT leaders have broadly come to accept 'vanilla IT' as the status quo. They've lost the will to seek out competitive advantage from IT systems. A belief of many technology gurus is that enterprise computing has become more about 'standards and compliance' than competitive advantage – better for every player in a market to use the same underpinning technology stack nulling out the influence of IT on competitiveness.

Regulation is driving information technology (IT) spend and this is stifling innovation. We are seeing 'vanilla IT'. Vanilla IT has become too prevalent in many large enterprises. The organization is preventing users having anywhere near the computing power they have at home. James Bennet, Director of Technology, Communications and Entertainment at Ernst & Young

Services-oriented architecture

SOA - Enables the aggregation of a diverse portfolio of IT assets in order to deliver business services.

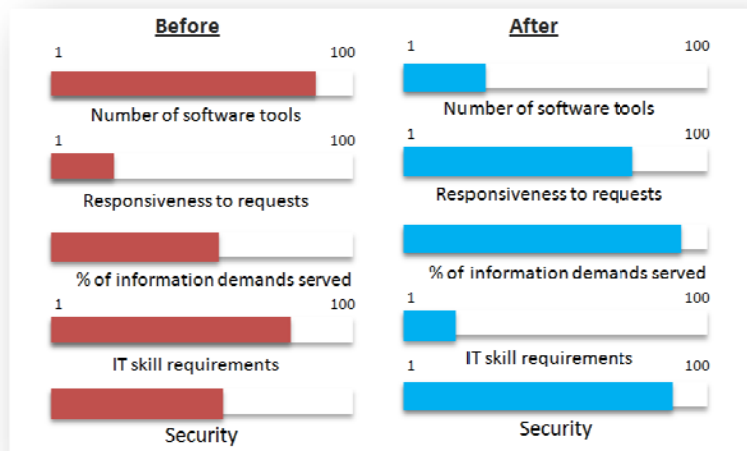
Companies with ERP systems will immediately benefit from years of data asset investments...

While IT gurus argue over the source of competitive innovation - without the ability to access, transform and re-use corporate information assets - opportunities to lever competitive advantage are significantly constrained.

A services oriented architecture enables the aggregation of a diverse portfolio of IT assets in order to deliver business services that support operations more effectively, with minimal effort, and without the need for specialized skills. In a services oriented architecture, programs are essentially turned into black boxes that can be used to build new business services without any knowledge of where or on what system they are running.

Companies with ERP systems investments will immediately benefit from years of data asset investments as this knowledge becomes accessible to departments and decision makers across the enterprise. Technology investments can feed off each other creating the maximum value and improving return on assets. While IT gurus argue that competitive innovation will likely come from innovations in cloud computing, social operating systems, agile development and web portal strategies, without the ability to access, transform and re-use corporate information assets, there can be little doubt that opportunities to lever competitive advantage are significantly constrained.

Perceived value benefits of migrating to a services oriented architecture and operating environment (employing social operating systems and data mashup tools)



Source: Encanvas Ltd 2008©

Creating capacity for change

For IT leaders, the key challenge today is to rekindle the competitive impact of the IT function.

For IT leaders, the key challenge today is to rekindle the competitive impact of the IT function through adoption of a services-oriented architecture but to do this requires a re-alignment of investment to value: economies have to be found in operational budgets to release capacity and money for innovation. A number of embryonic strategies are surfacing in the boardroom (often sponsored by CIOs / IT leaders) to facilitate this resourcing transformation:

IT leaders are happily jumping on the willingness of line-of-business managers to take accountability for IT projects to try out and validate new innovations.

Passing responsibility back to line-of-business managers

IT leaders are happily jumping on the willingness of (increasingly IT literate) line-of-business managers to take accountability for IT projects to try out and validate new innovations. With information management being so critical to workforce productivity and process excellence, progressive line-of-business managers are leading the charge to try new things and lever technologies they use in their social lives that have yet to cross the Rubicon into the business world. The deal being offering by resource constrained IT leaders is straight-forward: "So long as it doesn't threaten business continuity or security, see if you can make it work in your department and, if you can, then we'll talk."

The report 'Greater Business Value' published in 2008 by IT industry analysts Gartner Inc. exploring the changing landscape of enterprise business intelligence states that by 2012, business units, not technology departments, will be held responsible for more than 40 percent of the total budget for BI projects. They add "While technology departments might be making decisions about what technology products to run, business units will be the ones deciding what to do with those tools once they're in the enterprise."

Cross-sourcing operational IT duties

To align IT budgets away from operational pressures towards innovation, organizations are exploring outsourcing and cross-sourcing arrangements with IT services companies where proficient expertise can be acquired on demand to serve operational demands. Key areas of outsourcing include applications engineering, help-desk, upgrades, security and platform administration.

Cloud computing - a computing model by which users gain access to their preferred portfolio of information services from anywhere, through an Internet browser.

Platform outsourcing and cloud computing

Cloud computing is a computing model by which users gain access to their preferred portfolio of information services from anywhere, through an Internet browser. The term 'cloud' is used as a metaphor to suggest a digital cloud that's everywhere; supplying a seemingly endless source of processing resources. The advent of cloud computing is providing new opportunities for organizations to call on the investments and expertise of specialist platform management vendors. The cost of maintaining systems and supporting demands for change is encouraging IT leaders to consider moving their systems to 'the clouds'.

The growth rate of cloud computing is expected to be over five times that of on-premise IT delivery and consumption models. Market analysts IDC suggest that 'One third of all new IT investment will go on cloud-based technologies by 2013'. By 2012, they predict, customer spending on IT cloud services will grow almost threefold to \$42 billion.

Adopting agile design and self-service tools to serve up agile IT

An unsupportable level of demand for information is causing IT leaders to consider new ways of bringing more self-serviceability of applications to online web workers.

Middle managers spend more than a quarter of their time searching for information necessary to their jobs, and when they do find it, it is often wrong. Source: Accenture Information Management Systems sponsored survey, January 2007.

The risk for IT teams of making more self-service tools available to departments is a free-for-all that results in unmanageable data structures...

In response to these demands, IT leaders are adopting services-oriented information management architectures whereby IT teams forge 'formal' data links to core data sources to make 'web services' available to business users on their own terms. Information is served up in a form that is easily understood and may be re-used time and again by users for different applications without creating a mishmash of data structures and connections to systems that would degrade database performance and be impossible to regulate or sustain. The risk for IT teams of making more self-service tools available to departments is a free-for-all that results in unmanageable data structures and risks of data corruption, security breaches and accounting errors owing to users unknowingly looking at the wrong data – or worse still, exposing sensitive data to unauthorized people.

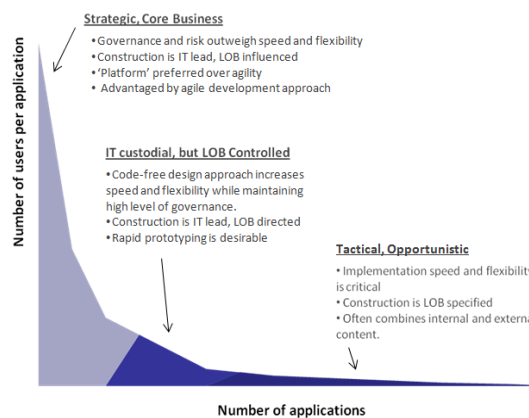
Advances in operating systems and Rich Internet technologies are introducing a new generation of software applications that provide point-and-click tools for IT teams to design and deploy new business applications without the overheads of integration and programming. These tools enable IT teams to design applications iteratively in consort with business stakeholders. Not only do these new design methods increase the likelihood of better applications, they also remove the costs of reworking (i.e. Re-coding applications when authored solutions don't meet the business need/user expectation).

Mashing up the enterprise

The Long-tail of applications demand – Small communities of users demanding proportionately large numbers of applications.

The people responsible for innovation, sales growth and the empowerment of cross-organizational teams represent a proportionately small group of users as a proportion of the total enterprise community, yet their demands for applications are disproportionately high creating what has become known as the 'long-tail of applications' (see how the diagram stretches out to the right because of small numbers of users demanding a larger number of applications to serve their needs).

The long-tail of applications; a driver for service-oriented architectures



Social operating systems place people networks at the core of computing architectures.

Social operating systems

The successor to enterprise portal suites, these systems manage and facilitate human social relationships and interactions to provide individuals with a means of accessing social networks, content, applications and communications tools at any time. The *always online society* made possible by the *Internet* and *mobile computing* is the primary factor behind the timely arrival of social operating systems while the so-called 'participative age' is the prime driver of demand. The marked difference between social operating systems and the enterprise portal suites that precede them is the realization that people and their networks must be at the very core of the computing architectures if they are to be successful rather than databases (i.e. 'doing IT for people, not to them').

Exposing the rich social fabric that underpins business life and capturing meta-information on user behaviors, relationships, knowledge sharing, document collaboration etc. means for the first time that IT systems can progressively learn what matters most to users inviting a new era of collective intelligence and wisdom. It's not inconceivable that within a matter of a few years, social operating systems will be able to serve relevant content to users even before they know they need it, and the greater use of natural language enquiry and predictive models could further sharpen the ability of systems to almost instinctively interpret and respond to user needs.

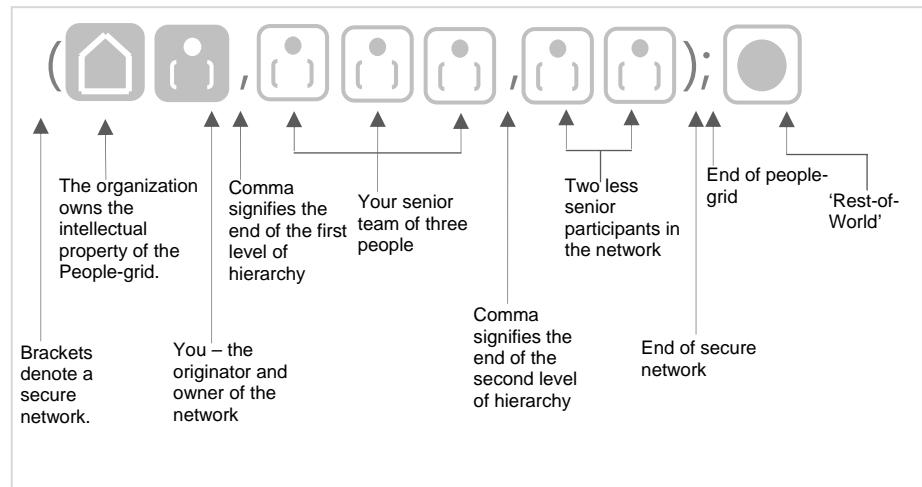
With social operating systems, the concept of networks morphs from a vision of wires and computers to people and their relationship ties. Social operating systems might be considered the ultimate end-game of computing; a human-centric computing model that binds information, knowledge and wisdom to people and communities. Only recently has *business computing* shared with the consumer world a similar vista of the future as interest in social networking, and its business impact, has grown.

For business, the critical role of social operating systems is to facilitate the creation of gated social networks...

For business, the critical role of social operating systems is to facilitate the creation of gated social networks that may be used as part of organizational design because they can be made accountable for delivery of specific project outcomes while contributors are contracted for their specific contributions to the outcomes.

This organizational design component removes any potential lack of clarity over intellectual property ownership, terms and conditions of contributions etc. and makes on-demand resourcing of talent and knowledge markets a realistic possibility. This is exemplified in the illustration overleaf that shows the requirements of a gated social network for business.

Design components of a gated situational social network.



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The emergence of social operating systems is hugely relevant to ERP strategy because these platforms promise to become the future consumption vehicle for corporate information assets.

The emergence of social operating systems is hugely relevant to ERP strategy because these platforms promise to become the future consumption vehicle for corporate information assets; where the App Stores and information services they employ become the information building blocks that bridge between the traditional world of enterprise computing and the new world of secure online communities and millions of unique information experiences delivered online every day.

Social operating systems are the essence of human-centric computing – easy to use, focused around the ego-centric needs of individuals and their social networks. Their broad capabilities require significant investment from vendors and this prohibits the number of potential vendors likely to be able to offer mature solutions.

Current front-runners vying for inclusion in the early stage social operating systems market include such names as Apple, Facebook and Google. Other companies on the fringe and likely to break into this market include Amazon, eBay, Cisco, Microsoft, IBM, Oracle, Socialcast, BlueKiwi, LinkedIn, Encanvas (Squork) and Jive.

Social operating systems exploit Rich Internet platforms to provide easy-to-learn-and-use applications accessible anywhere. They combine data mashup applications, exploit web services and adopt the 'App Store' concept popularized by the iPhone to recycle and re-use applications. They also focus more on the support of 'social processes' to serve human needs for appropriate protocols supporting casual, informal and formal conversations together and giving social context to the interaction of people.

Social operating systems support a rich feature-set limiting the number of players



Social operating systems leverage new asynchronous hybrid forms of peer-to-peer and group web-chat...

Social operating systems leverage new asynchronous hybrid forms of peer-to-peer and group web-chat communications that have advantages over email given that interactions are live, group-based and more secure; delivering a user experience more in-tune with a generation of web-workers accustomed to 'instant' communications and collaboration over the Web.

'Hybrid' social web-chat technologies bring people together on the same page



Inclusive security – It's no longer possible to protect the outer boundary of the enterprise...

Inclusive security

A major inhibitor to innovation in IT has been the threat of data security breaches and non compliance brought about by use of inappropriate systems. It's no longer possible for organizations to protect their outer boundaries; with the advent of collaborative working practises sub-contractors, industry partners and customers all expect to access information that has traditionally been held within the Firewall of the enterprise. For this reason the computing industry has moved towards inclusive security models that govern identity management and access to systems, data governance, system security and intellectual property rights management. Overcoming these security threats without creating a burden of operating overheads (the result of having to perform unwieldy data governance and administration tasks) makes adoption of new approaches more possible and more affordable.

Re-modelling for enterprise information management architecture

With the inevitable acceptance that there *can never be* a 'closed corporate information management system', the assumed role of ERP systems is now under scrutiny. The question now being asked is which components are ERP components best at and what to do for other areas.

The key layers of modern enterprise computing platforms are:

Hosting Layer

This is the core hardware and software computing platform and its associated management and administration tools. Increasingly, organizations are expected to outsource core systems platforms in the next period due to the economies gained by cloud computing ('multi-tenant') approaches but there remain major concerns relating to the proprietary nature of current platforms, limitations in the ability to scale data stores and base customer service and applications deployment platform administration tools.

Administration Layer

The administration layer includes software and related services responsible for technical development, governance and continuity of business systems. This segment is experiencing the most dramatic shift in scope and approach owing to the introduction of agile development techniques, data mashup software tools and integrated software platforms like Encanvas Secure&Live™ that support massively scaling 'secure and live' portal architectures demanded of social operating systems.

Master Data Management Layer

Managing a single version of the truth continues to be a business critical necessity for business organizations. Achieving this in a services oriented world requires

Master data management – managing a single version of the truth...

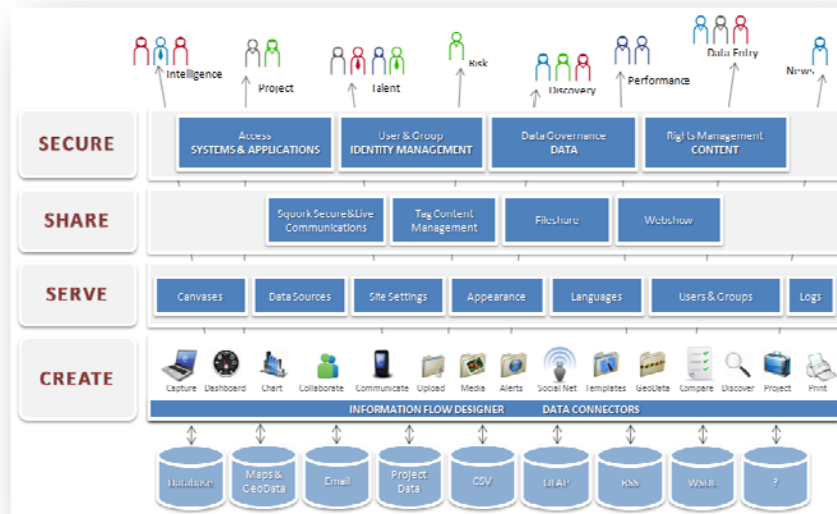
richer tools to understand how data is being governed, who is using it and HOW they are using it. Where third party data is being used, Master Data Management strategies must take account of how useful and accurate external sources are and what level of trust should be attributed to them.

Information & Apps Services Layer

This technology layer provides software tools and related services to enable IT professionals to support the information service delivery needs of information workers. While the future of computing is likely to involve greater self-servicing of information, and the services that provide information, the level of computer literacy today means that most people in business do not understand how relational databases work and this absence of knowledge can cause critical errors if not governed appropriately. For example, it's conceivable that a business manager might elect to create their own 'data mashup' of customer data and statistics and base decisions on this insight without knowing that they are referencing the wrong tables in the database. It is likely that the majority of organizations will continue to employ IT professionals in support of applications and web services development, but new point-and-click tools will dramatically reduce the burden of programming, testing, deployment and re-working of new applications.

New point-and-click tools will dramatically reduce the burden of programming...

Integrated Software Platforms like Encanvas Secure&Live provide a complete environment for the design, deployment and operation of applications



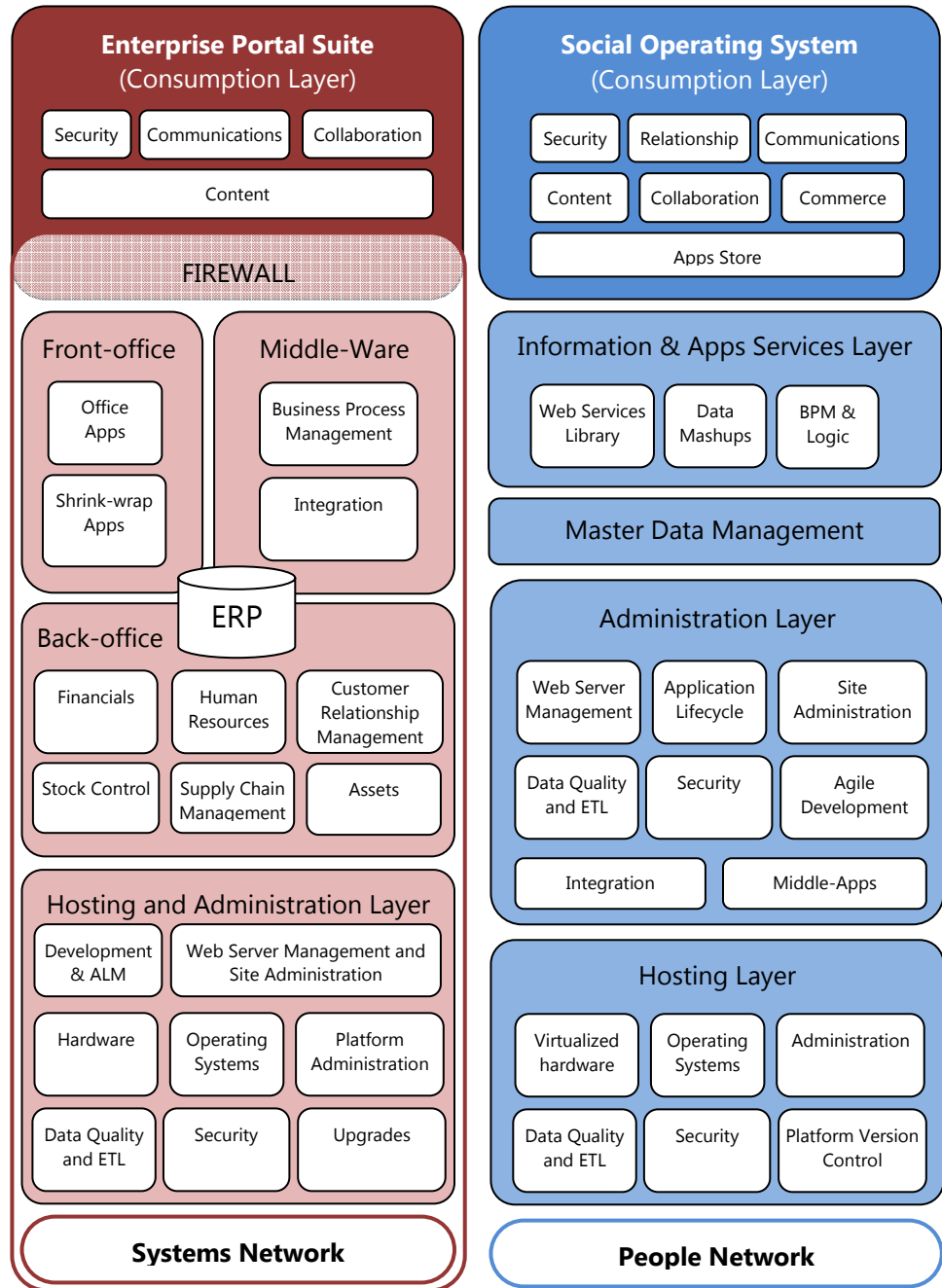
Social Operating System Layer

Social operating systems provide information workers with a 'secure and live' virtual workspace able to blend social networking, collaboration, communications and access to business systems in a single environment accessible anywhere via a browser. The massively scaling portal architectures of social operating systems mean that users can enjoy uniquely rich and personalized experiences. They are

Social operating systems provide information workers with a 'secure and live' virtual workspace...

able to collaborate with fellow colleagues, customers and suppliers in open and gated workspaces whilst having fewer concerns over security of data, systems and protection of intellectual property than they have today.

Comparison between traditional and modern view of enterprise computing



So which components of IT architecture should ERP systems deliver?

The issue of determining what proportion of the total enterprise information management architecture should be delivered through ERP is a growing debate. The chart below provides a summary of the key technology platforms and considers which of these capabilities ERP is best suited to deliver.

	Arguments For	Arguments Against
Master Data Management	ERP systems adopt robust protocols to ensure data assets are made secure	A single ERP system can never support the majority corporate information assets of an agile enterprise
Business Process Modelling	ERP systems provide boiler plate solutions for core business services	Processes implemented by ERP systems tend to be an over-kill. Case experiences show that business stakeholders are best placed to specify their information requirements
Customer Relationship Management	ERP systems can integrate CRM processes to create a joined up IM strategy	ERP systems demand that sales representatives spend too much time manually entering information
Enterprise Portal and Social Operating Systems	All major ERP systems now offer portal solutions	ERP systems have limited track record in supporting social networking and mashup portals

With no single strategy fitting every organization, there are several strategies IT leaders can explore:

UPGRADE

Large footprint - single source

Find an ERP system that has the agility to scale to meet all business needs. There are technical reasons why this probably isn't possible. Furthermore the dexterity of functionality – and social networking functionality - required by service oriented platforms are normally at odds with the culture of ERP systems vendors. There are also affordability issues to consider as ERP vendors charge a premium for software modules based, no doubt, on the premise that buyers can only source modules from them. Even if a vendor is able to deliver all of the functional components needed for the enterprise, it would still be a sensible precaution to make sure integration options exist to blend systems (as no system is an island these days).

ERP vendors tend to charge a premium for their software modules - buyers can only source modules from them if they want a single source solution

Thoughts.

- What agility exists to support near-constant change in processes?
- How to service the long-tail of applications demand
- How open is the platform? Does it use a proprietary database that will be difficult to migrate from?
- Approach to services-oriented architecture
- Master data management policy
- Social operating system features
- Is there an SOA version?
- Are charging models able to support a pay-as-you use (utility) based pricing model
- Is a cloud borne solution an option?
- What level of proprietary tie-up is involved?
- What is the cost of migrating to the new ERP system from the old?
- What data-quality strategy does the vendor recommend?
- What is the potential cost of porting to an alternative system
- Support for mobility and remote working
- Policies and protocols for inclusive security including network, message and systems security, identity management and access control, data governance and security and IP protection

Small footprint - focus on a core business processes

Another stance is to source an ERP product that shows promise in its support for core processes and explore BPM tools as a means of providing richer support for the enterprise with agile development methods. In this case the proposal focuses on a small foot-print of ERP recognizing that – in the age of information consumers – ERP systems can no longer be the sole gate-keeper of enterprise processes and information assets.

BUILD

Medium footprint - build your own ERP solution

It's almost hard to think about now but in the early days of computerization of financial accounts it wasn't uncommon for large corporations to build their own ERP solution. With today's agile development software and BPM tools there are arguments that organizations are better placed than ever before to consider self-authoring a solution that fits their business and can be serviced by multiple contractors without a restrictive commercial tie-in to one vendor.

MODERNIZE

Medium footprint – A blended strategy

Probably the most popular emerging strategy is to consider a blended strategy formed around a Master Data Management and Services-Oriented Architecture where the usefulness and 'fit' of existing ERP data assets is assessed and decisions

Probably the most popular emerging strategy is to consider a blended strategy formed around a Master Data Management (MDM) and Services-Oriented Architecture (SOA)...

are made whether they should be re-sited, merged with another ERP system or re-designed. With the broad range of mature offerings in the BPM and agile development arena now available a growing number of IT thought-leaders are promoting the idea of Rich Internet based blended strategies.

Bruce Richardson of AMR Research Technology in his article ‘ERP Doomsday Scenario: Death by SOA? (August 17, 2006)’ suggests a doomsday scenario for ERP vendors is that, circa 2010: SAP and Oracle customers stop buying applications from their ERP vendors. Instead, they contract with low-cost Indian or Eastern European integrators to build custom composite apps that sit on top of their ERP backbone. In 2005 a major wholesaler was able to forego a PeopleSoft upgrade by putting new features out in a service-enabled middleware stack. Richardson suggests, SOA may not overcome ERP with one big sloop, but through a dribbling of features toward the service layer, forestalling or reducing upgrades.

No footprint - Forget ERP, think MDM!

Consider what the Master Data Management strategy of the enterprise should be and what role a core ERP system should fulfil. There are arguments that more adept Business Process Modelling (BPM) tools exist to create processes across the enterprise; that customer relationship management should be more social and community based and that sourcing more open applications solutions is more cost effective and assure a ‘better fit’ to the way a business actually works without having to synthetically re-model the business to fit the ERP system.

A more thoughtful and future-proof strategy is to consider what the Master Data Management (MDM) strategy of the enterprise should be and what role a core ERP system should fulfil.

OUTSOURCE AND SOA

Open, services-oriented ERP outsourcing

An increasing number of service-oriented ERP offerings are appearing in the market, fuelled by the potential of cloud computing and Rich Internet Applications to provide a more, affordable, open and agile computing platform for businesses that is better placed to deal with rapid growth and scale to global proportions.

Competency matching

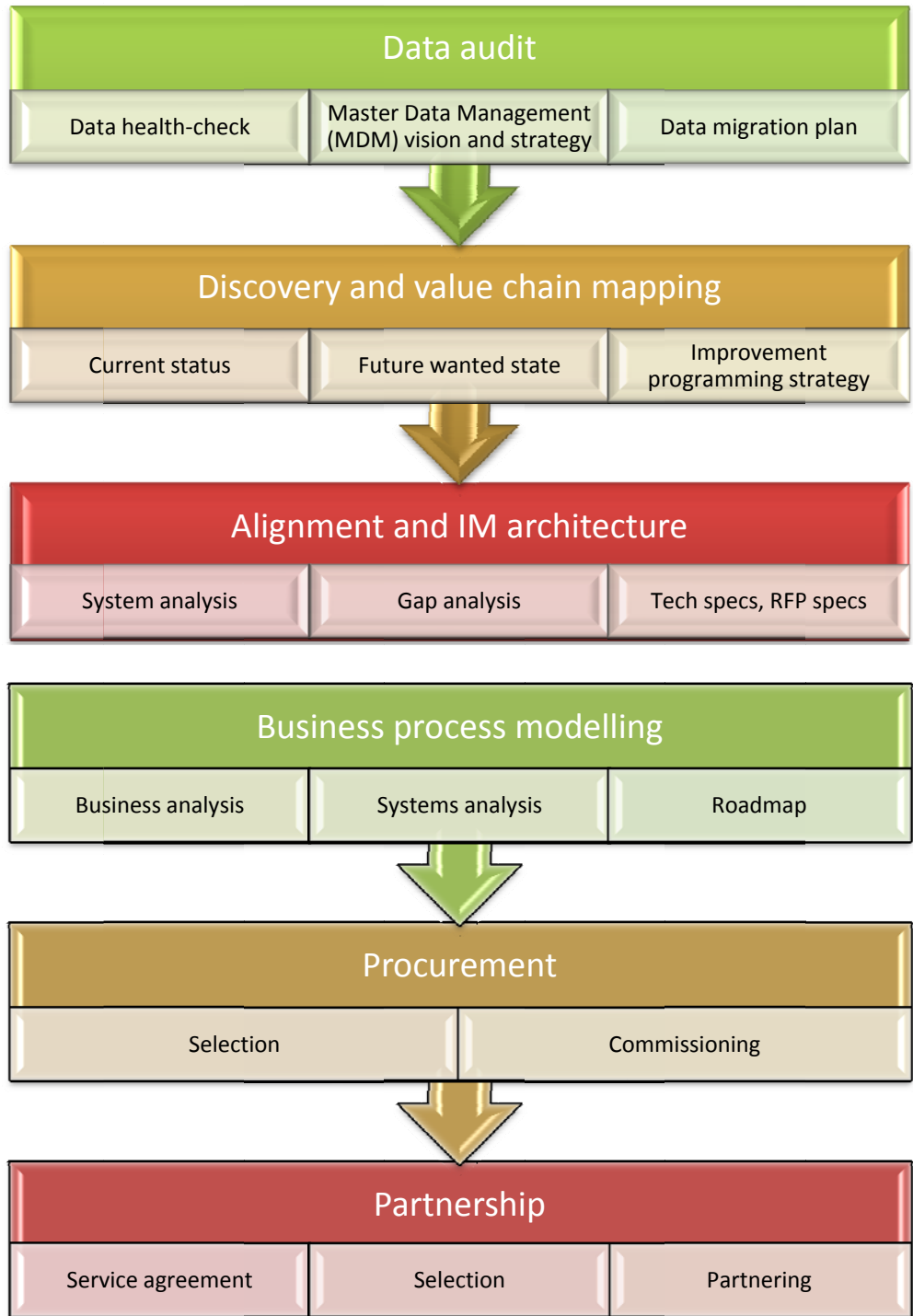
The disciplines demanded to meet all project aspects are unlikely to be supported by a single vendor. Referenced competencies might include:

Item	Competencies	Source
1	Data analytics, ETL and master data management	Data quality and ETL
2	Organizational engineering and alignment	Management consulting
3	Business processing modelling and RFP design	IT consulting
4	Systems supply	Systems vendors
5	Systems deployment and project management	Systems vendors / IT consulting
6	Project facilitation, outsourcing and cross-sourcing Platform support	App dev, systems engineering, outsourcing
7	Customer service and help-desk	Outsourcing

Key project stages

While different circumstances and project kick-off points will vary approach, Encanvas identifies the following project stages as being important:

Recommended phases of ERP improvement programs



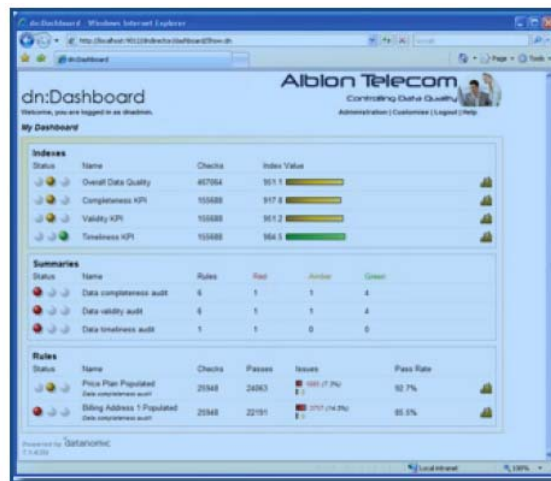
1. Data audit

Know what you know and cut IT projects costs and risks

Businesses spend billions of dollars migrating data between information-intensive applications yet 75% of new systems fail to meet expectations, often because flaws in data quality or the migration process are not adequately validated. With the excitement of new systems and capabilities, data migration planning is sometimes seen as the 'dirty end' of IT systems transformations: shifting data from one bucket to another via a process that it seen as a necessary administrative overhead. The most effective way to deliver value from new systems is to make sure data quality is high at an early stage. A data discovery audit enable organizations to quantify and publish evidence of the true impact of Data Quality issues within the business before advanced plans and expectations are put in place.

The most effective way to deliver value from new systems is to make sure data quality is high at an early stage.

Advanced interrogation and analysis tools speed up and improve the quality of data analysis enabling planners to appreciate data quality threats



Source: Datanomic Ltd

2. Discovery and value chain mapping

Business case development: Appreciate how to align information management strategy and priorities to make the biggest impact on customer value and operational excellence.

The discovery phase, when conducted in an inclusive manner, minimizes project risk by sharing project goals and expectations with stakeholders and ensuring there is a shared commitment (and accountability) to achieve project goals.

The discovery phase, when conducted in an inclusive manner, minimizes project risk by sharing project goals and expectations with stakeholders and ensuring there is a shared commitment (and accountability) to achieve project goals. This is an opportunity to engage with stakeholders to identify quick wins, scope critical success factors, appreciate human-centric areas of organizational improvement and any additional information management requirements that may fall within or beyond the scope of the project. Key analytical elements include an examination of MDM strategy, a data quality health-check and information service needs analysis.

Approach:

1. Scorecard development / review
2. Economic value chain modelling
3. Issue Signature Analysis (ISA) for key stakeholders
4. Workshop reviews with senior management team
5. Draw up statement of requirements

Considerations:

Agree a discovery project profile. Thought should be given to:

- Does the organization understand how its processes contribute to strategic objectives and golden threads?
- To what extent are customers, industry partners, channel partners, sub contractors, outsources, SSC's (etc.) contribute to the economic value chain and, if they do, to what extent must ERP systems support them?

Outcomes:

Improvement programming report comprising of:

6. Project scope
7. Strategy model
8. Recommendations for improvement programming (including training)
9. Options and opinions - quick wins and critical success factors
10. Risk analysis

IM discovery report comprising of:

11. Project scope
12. MDM report (including findings and recommendations)
13. Data quality report (including findings and recommendations)
14. SOA report (including findings and recommendations)
15. Opportunities and quick-wins
16. Statement of requirements
17. Risk analysis

3. Alignment and IM architecture

Develop coherent IM strategy: Gather business and technical requirements to create an information management strategy aligned to the current and anticipated future organizational needs with clearly articulated customer value and operational excellence benefits resulting from project investments.

Approach:

18. Mapping and prioritization of processes to economic value chain
19. Action framework organizational design model
20. Architectural modelling
21. Draw up statement of requirements

Outcomes:

IM report comprising of:

- Project scope

- Strategic alignment model (cascading scorecard)
- Process maps
- Data quality and enrichment strategy
- MDM strategy
- ERP strategy
- Portal strategy
- Opportunities, quick-wins and risk analysis

4. Business process modelling

The purpose of this phase is to provide detailed use cases and process models as a pre-cursor to development or procurement.

Approach:

22. Business analysis
23. System Analysis
24. Development roadmap or specification for RFP

Outcomes:

- Business process and system analysis
- Requirements specification
- RFP documentation or development roadmap

5. Procurement

The procurement phase for systems or services.

6. Partnership

The purpose of this phase is to select appropriate partners for hosting, cross-sourcing and outsourcing to re-align IT investments away from operational competencies towards innovation and improvement.

Considerations

Given its strategic remit of ERP systems to guide the hand of core business processes and protect and serve the most critical information assets, any decision to replace or upgrade is a big one. It's worthy of considering a series of broader strategic questions:

1. Check to make sure you're answering the right question
Understanding WHY a change in ERP system is being considered helps focus minds on how to better serve business needs. When approaching ERP deployments second time around, it's likely that transactional processes are well understood and function well, so the broader question is around the growth support opportunity, such as support of online communities (partners, suppliers, customers) etc.

Drivers for upgrading or modernizing ERP systems may include:

- The cost of the incumbent ERP system is getting intolerable
- Platform obsolescence
- Platforms fail to fit business needs
- Inability to support communities
- Harmonization – Too many ERP systems
- Cost of sustainability and upgrades

Drivers that raise 'ERP performance' on the priorities agenda may provide an opportunity to reflect on the balance of accountability within departments over IT projects. It might also offer the opportunity to re-qualify the alignment and value that IT offers the enterprise. A broader debate can deliver more returns to the business, such as:

“How should the IT function support process owners in always delivering operational excellence and what is the expected future role of ERP systems in this context?”

2. Question if 'mechanization of processes done by IT' the right path

There is a huge risk that 'doing IT to people' will only result in more mechanization without creating ownership, accountability and double loop learning in operational silos. Improvements in IT 'functionality' and data quality might well be offset by poor workforce engagement and a lack of talent exploitation. Perhaps a better strategy would be to engage departmental leaders on how to engineer continuous improvement and consider embedded process improvement managers (trained in IT) within change teams.

3. Think about the broader master data management outcomes

Accepting that the majority of business critical information will in future be sourced from beyond the boundaries of the enterprise, perhaps a review of Master Data Management and SOA strategy will define requirements and scope of ERP.

Recommendations

Before making decisions on how to modernize ERP platforms, IT leaders should consider the following strategic questions:

1. How does the organization set an improvement agenda that embraces process mechanization but isn't driven by it (resulting in 'doing IT to people, not for them')?
2. How well does information management strategy serve the business today - and what about tomorrow? What gap exists?
 - a. Is the standard of data quality able to support the objectives of improvement programmes?
 - b. What Master Data Management architecture should exist to support change in the business and what role has ERP to play in that strategy?
3. How can a joined-up improvement program be initiated that:
 - a. Delivers break-through customer and shareholder value benefits, competitive advantage and cashable efficiency savings
 - b. Encourages line-of-business stakeholders to take accountability and responsibility for improvement.
 - c. Considers human and system opportunities (and threats) of improvement
 - d. Meets IT deadline targets for systems improvement

The role of Encanvas in ERP modernization

Encanvas[®] software makes the workplace work better, bringing value to the Microsoft[®] enterprise platform by creating the technologies organizations need to spend less and achieve more from software investments. The company has created the world's first Integrated Software Platform; digital equivalent of the micro-chip. Its Secure&Live™ platform enables the design, deployment and operation of applications without coding or scripting all made possible by a single tightly coupled architecture. Encanvas facilitates the massive scaling of portal architectures so users can communicate, share information and their applications in real-time while operating in 'secure spaces' that protect systems, data, identity and intellectual property.

Risk mitigation

Encanvas reduces project risks in the following ways:

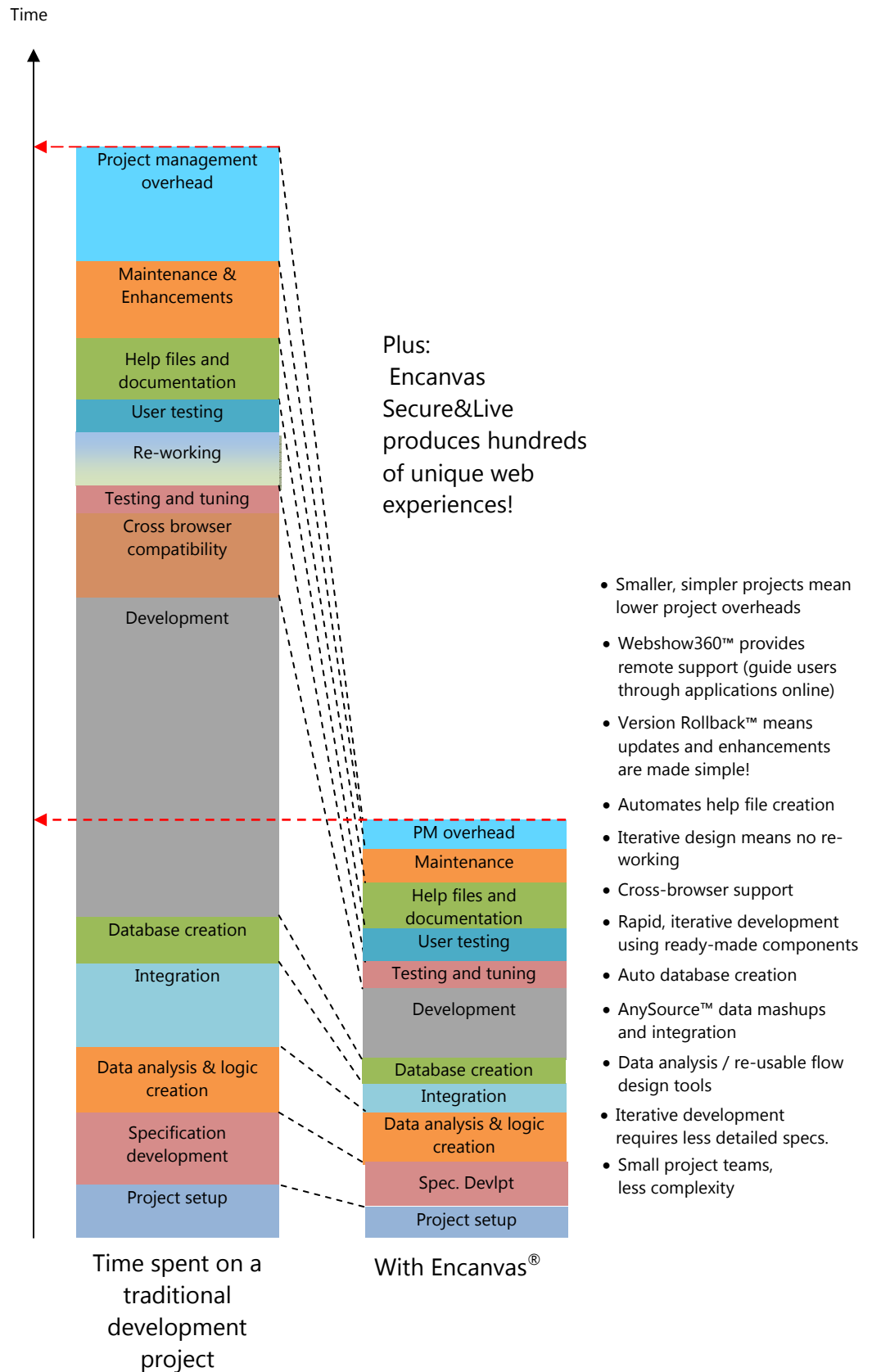
1. Encanvas rapidly constructs functioning software applications (that are live working systems, not prototypes or simulations) to enable stakeholders to quickly realize the value of applications without exposing the organization to high costs of development.
2. The cost of learning is slight. Developing new applications is a learning exercise and mistakes will inevitably be made but, with Encanvas, the cost of change is minimized by its iterative design approach and simple deployment.
3. Encanvas adopts industry standards in every aspect of its deployment which means there is no proprietary tie-in to software vendors.

Software development cost reduction

Encanvas Agile is an example of an agile development environment created for the services oriented world. Using ready-made applications building blocks, Encanvas dramatically reduces programming overheads and encourages iterative design and publishing of business applications.

Encanvas is supplied on a licensing model which means there is no on-cost for successive applications. IT teams can create as many applications as they like for portal or mobile deployment without any frictional IT costs. Furthermore, Encanvas releases capacity in IT teams to focus investments in IT towards customer value and shareholder returns.

Impact of Encanvas Secure&Live™ on software development process and costs



Growth innovation support

Encanvas supports growth innovation within organizations by enabling IT teams to serve more stakeholder requirements for 'best fit' solutions. It offers a 'see-no-code' design, deployment and operational management platform that cuts the amount of coding and scripting required when deploying business applications. It facilitates the embedding of IT professionals into business improvement teams to design new applications iteratively in consort with stakeholders; speeding time to value, cutting the complexity/cost of projects, and removing re-working and integration costs.

Data mashups and federated applications

Advanced data integration capabilities enable Encanvas to exploit services oriented architectures and acquire data from silos across the enterprise and beyond. Its ability to re-use and bridge across information sources to create new business applications and dashboards provides rapid time to value.

Supporting information management for communities

With its rich data integration and mashup features blended with Rich Internet Applications development and cloud based deployment, Encanvas extends ERP systems to support the needs of supplier, industry partner and customer communities.

About the Author

Ian Tomlin is a thought-leader in organizational engineering. He has published several books and several white papers on organizational design and technology architecture based on his. He serves on the Management Board of NDMC Consulting Ltd and Encanvas Inc. His clients include Canon Inc., Ernst & Young and Transport for London.

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