FIVE STEPS TO EVOLVING INTO AN INTELLIGENT, HIGH-PERFORMANCE ENTERPRISE

Where does your organization stand in the Information Evolution Model, and how do you get where you need to be?

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Executive summary

In a business climate that punishes the inefficient and the slow-moving, enterprises are under pressure to manage their information assets more effectively, efficiently and wisely than ever. The information-management framework is no longer an adjunct support structure; it is the essential foundation for corporate performance. Understanding how information is obtained, validated, stored, accessed and distributed is now central to organizational survival and profitability.

A company's success in managing its information assets is a function of four dimensions: infrastructure, knowledge processes, human capital and culture — all working in concert. A company's maturity along these dimensions can be fairly represented in a five-level evolutionary path:

- An **operational** level characterized by individual data "ownership" and control, where individuals apply information to tackle day-to-day functional issues.

- A **consolidation** level where individual perspective is replaced by departmental or functional standards, metrics and perspective across all four dimensions.

- An **integration** level, which expands consolidation from the previous level into an enterprise view.

- An **optimization** level in which the organization can focus its energies on finding greater efficiencies in all dimensions, more accurately predicting the future and creating extended networks that include: customers, suppliers, business partners and other stakeholders.

- Finally, an **innovation** level in which growth and most revenue potential is fueled by constant change, creativity and renewal.

Each level is a natural and necessary precursor to the next one; each higher level encompasses and exceeds all previous levels. Although a majority of today's organizations operate at the operational or consolidation level, the winners of the next ten years will be the ones who achieve at least the integration level. However, companies that reach the integration level will quickly see the strategic advantages of reaching optimization and will chart a course to get there.

The jump to the innovation level is somewhat a leap of faith because the ideal of constant innovation runs contrary to the ideal of optimization. There is, after all, a certain amount of waste inherent in exploring new ideas — some of which will be worthy and others not. However, innovation is the key to sustainable competitive differentiation in an environment where even the best ideas can quickly be copied and commoditized.

The good news is, no matter how simple or convoluted an organization's current information architecture, a logical path has been charted to guide evolution into an information-driven, "intelligent" entity — a survivor. This document describes the characteristics of each evolutionary level along the four key dimensions — infrastructure, knowledge processes, human capital and culture — and provides a high-level roadmap for evolving your organization to the highest level.

Five steps to evolving into an intelligent, high-performance enterprise

Reflect for a moment on the top questions that must be answered to drive your business forward. For instance:

- Who are our best customers, and how can we increase the value of our relationships with them?

- Among the IT infrastructure projects on the plate, which ones will yield the best return on investment?

- What is the true cost of major business processes, and which processes are inefficient?

- How can we align business unit objectives to best satisfy corporate objectives?

- Can I sign my good name to the financial statements being submitted to the Securities and Exchange Commission?

Now consider all the information that must feed into every one of those decisions. Do you have full confidence that every relevant byte of data is valid and accurate, that all factors have been duly considered and that every contributor along the way is operating from one version of the truth?

If the answer is, "Well, yes and no, sometimes," you're in good company. In spite of the technology advances of the last few decades, the majority of enterprises still operate at a basic level of information management — something like a one or two on a five-point scale. The trouble is, new business realities are ratcheting up the expectations and making it more critical to manage information more effectively.

The emerging business climate is more punishing than ever to the slow-moving and the inefficient. Old ways of managing information may have worked in the past, but they're already constraining some organizations — and dooming others. It's time for enterprises to:

- Reassess their ways of managing and using information.

- Strive for systematic evolution to more competitive information-management models.

Let's look at some of the new business realities that make these goals a challenge.

Six reasons to reassess your information-management strategies

1. Business cycles are shrinking

The productivity tools that enable your organization to design, develop and deliver faster than ever are doing the same for your competitors. Consider, for example, computer-assisted design, global collaboration teams and Internet marketing. These technological developments also deliver a dark side by compressing business cycles into a fraction of their previous span. Processes that once fit into a seven-year cycle might now be compressed into 18 months or less. Today's unique product or service quickly becomes tomorrow's commodity offering as competitors speed their own versions to market and force you to compete on price rather than innovation.

Shrinking business cycles have put many staid, slow-moving organizations into hot water. A quick scan down a column of 52-week-highs and present-day lows on the New York Stock Exchange listings will reveal an uncomfortable number of stalwart Dow veterans teetering on the edge of junk status after decades of robust earnings. The paths of past success are not reliably leading to future success. The path of conservative certainty is proving to be riskier than the uncertain paths of innovation and re-engineering.

Time-to-market, once measured in years, is now measured in weeks. Turning points require on-the-spot decisions. Survival and profitability demand up-to-the-minute understanding of the big picture and constant innovation. Complex global organizations require multidimensional vision.

Pushing decision making closer to operational units has streamlined processes, but often without the corporate perspective required for high-quality decisions or the quality cross-functional information that reflects critical interdependencies. How can decision makers ensure that their decisions align with corporate strategy? How does management measure that alignment?

2. There's only so much juice in an orange

Companies have invested significant time and money optimizing their operational processes and implementing enterprise resource planning (ERP) systems to produce huge cost savings and competitive advantage. Naturally, so did their competitors.

Ultimately, operational optimization for efficiency's sake is like squeezing an orange. The first time you squeeze it, you get a significant return on investment. The next time, you get a little less. With your main competitors doing the same thing, everybody quickly ends up in a commodities war. The best you can accomplish with ERP is parity with competitors. The winner is the one who realizes that standardized ERP is a blessing, but not itself a miracle cure.

Maybe the answer is not to squeeze a few more drops out of the orange, but to question whether more orange juice is really the thing you need. Maybe the efficiencies ERP affords are being gained at the expense of enterprise goals.

3. Old rules don't apply in a different game

When today's business executives were growing up, they were led to believe the business world would operate like a fairly played game of Monopoly. Chart an unwavering march around the board, get bigger and bigger, and accumulate wealth. Mergers and acquisitions yield unsinkable profits. Tycoons and big empires rule.

The rules have changed. Today's business game is more like Pin the Tail on the Donkey — only in this game the donkey moves. A prescribed path will not help in this game; nor will a megamerger corporate structure that reacts sluggishly to market dynamics.

For at least three years, the global economy has been on a wild ride that has both challenged and reaffirmed all notions about "business as usual." Sure, the fundamentals are still true. Money counts. Profitability matters. Customers are number one. Stakeholders rule. Competitors are hungry. Yet at the same time, these fundamentals have been reshaped by double-edged trends that present new promise and new problems.

- The diversification wrought by mergers and acquisitions increased corporate reach and revenues but also made agility and holistic corporate perspective more difficult to achieve and maintain.

- The productivity advancements that increased yields and tightened schedules also ratcheted up all baseline expectations from management and customers.

- The information technology (IT) advancements that generated gigabytes of data about every phase of the process also drowned the systems that were supposed to capture and digest it.

4. Change is the only constant

The natural corollary to reason number 1 is that change is endemic, and it comes around more often than ever. Volatile markets squash companies for having poor business models, and they punish harshly for indecision.

At the same time, volatile markets reward a company's agility and willingness to evolve. But how does a company recognize meaningful change and realign corporate strategy to match? How does it determine whether to differentiate itself in an existing market niche or define a new one? How does it choreograph massive corporate change while minimizing risk and maximizing returns for shareholders?

Successful enterprises need more than static process in a competitive environment that is anything but static. They need to drive and harness change, rather than react to it. They need to focus on what will create value for the organization in the future, rather than on tallying up historic results. And they have to do it all at Internet speed.

5. You've gained global reach and presence, but so has everybody else

The World Wide Web — and the corporate networks it supports — have transformed the smallest organizations into global entities and the largest organizations into "local" entities with virtual teams and processes that span the globe. On the plus side, this means:

- Your potential market is as wide as the reach of global communication networks.

- Your suppliers and other outsource partners can be strategically chosen from the lowest-cost countries.

- You can attract the best and brightest talent for collaborative teams without requiring them to relocate.

On the minus side, globalization means:

- Your customers are increasingly crossing borders and expecting you to respond to their needs in every country in which they operate.

- Process- and quality-control issues are now complicated by spanning continents, languages, international standards and cultures.

- New international outsourcing, partnering and marketing options, while increasing choice and flexibility, also raise the complexity of doing business.

6. Information isn't a by-product of business; it's the life blood of business

The natural outcome of the first five reasons above is that companies must be faster and savvier than ever. They must be more innovative and adaptable. They must achieve more with less. In a short tenure as market leader, a company must produce maximum profit with fewer resources and with a shorter time to market. The common foundation required to achieve all these attributes is quality information.

Decision makers must have up-to-the-minute access to quality intelligence about all issues that influence their decisions — and all issues their decisions affect. The climate of the "new economy" requires autonomy at the business unit level based on enterprise information.

Companies must extract maximum value from the information that they have about suppliers, customers, competitors and global markets. This information is essential to knowing what the market wants, supplying it as efficiently as possible and promoting it in a way that will maximize market share.

Information is no longer a transactional by-product of business. It is the life blood of business itself. Proprietary information about customers, strategies and sales is the underpinning of success.

In the old economy, product and service attributes were sustainable competitive differentiators. Today, that advantage fades quickly as competitors join the scene. The only enduring competitive differentiator is quality information — the only thing that allows organizations to respond to constant external change with constant renewal and innovation.

Given this fact, an enterprise's information-management strategy can either be its most compelling asset or its most limiting deficit.

Is your corporate information strategy producing true competitive advantage? Is it producing proactive intelligence or is it just capturing and reporting past occurrences? Does it enable the organization to take action with long-term value in mind or just react to near-term problems?

Darwinism on a new-millennium timeline

By design or by default, corporate information management has already been through massive evolutionary change in the last 50 years. Those that did not evolve became extinct. A few decades have witnessed the evolution from manual business machines with carbon forms in the 1950s to electric business machines and photocopiers in the '60s; monolithic mainframes in the '70s; personal computers, fax and dial-up modems in the '80s; and high-speed global networking in the '90s.

This millennium continues the technology trend, but the new business realities force us to look beyond architecture and delivery mechanisms to the quality and long-term value of the information being produced. How does a company manage strategic information assets in a rapidly changing environment? What challenges arise out of that task? What preventive measures can be taken to ease the growing pains associated with moving from one information paradigm to the next?

No matter how simple or convoluted an organization's current information architecture, there is a logical path through evolution into an information-driven, "intelligent" entity: a survivor.

An evolutionary process

Information-management schemes evolve through five phases, illustrated in our Information Evolution Model (Figure 1). Each level is a natural and necessary precursor to the next level; each level encompasses and exceeds all previous levels.

The specific implementation of the model will vary among organizations, but characteristics at each evolutionary level are remarkably predictable across these broad dimensions:

- **Infrastructure** — the hardware, software, and networking tools and technologies that create, manage, store, disseminate and apply information.

- **Human capital** — the information skills of individuals within the company and the quantifiable aspects of their capabilities, recruitment, training, assessment and alignment toward enterprise goals.

- **Knowledge processes** — Policies, best practices, standards and governance that define:

  o   How information is generated, validated and used.

  o   How information is tied to performance metrics and reward systems.

  o   How the company supports its commitment to strategic use of information.

- **Culture** — organizational and human influences on information flow — the moral, social and behavioral norms of corporate culture (as shown in the attitudes, beliefs and priorities of its members), as related to the use and value of information as a long-term strategic corporate asset.

Because the levels are marked by familiar patterns along these four dimensions, the model is a useful framework for organizations to gauge their present evolutionary level, identify the advantages and limitations of that level and understand what steps to take next.
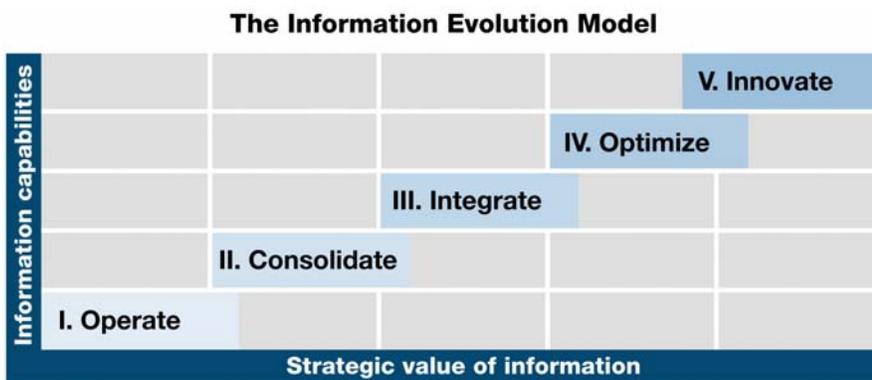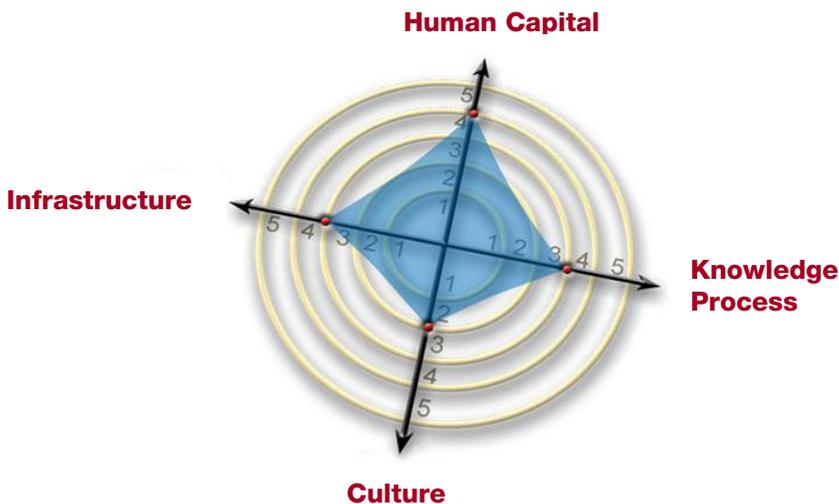

Figure 1: The Information Evolution Model

Figure 2: The four dimensions of the Information Evolution Model

Level 1: the operational enterprise

We have all seen or been part of a Level 1 enterprise. It might be a start-up or a mature organization struggling with "here and now" operational challenges or an entrepreneurial organization with a strong leader. Different as these organizations are, they share similar characteristics in our four key dimensions.

Level 1 infrastructure relies on manual systems or distributed PCs that are likely not networked — an environment that promotes individualism rather than team-building. Intranet/extranet capabilities, collaboration tools and governance processes are either nonexistent, limited or, at best, subjective and highly variable.

All kinds of analytical tools and technology platforms may be present, but they tend to be client-based rather than server-based. Information costs can be quite high due to redundant processes, duplication of data interfaces and extracts, and inconsistent data collection processes. Separate transactional systems support fragments of the total business operation, with little or no automated data transfer from one system to another.

Level 1 knowledge processes are uniquely individual. Peers in the same department work in very different ways, each with their own processes and ways of acquiring and analyzing information. Individuals needing information often have to develop their own or use existing transaction-oriented reports to perform their own analyses. "Information stars" and "data czars" emerge. They control data access, analysis and interpretation, and they thrive on the power gained from being the go-to resource.

Based on individual silos, information management focuses on day-to-day operations rather than long-term plans and enterprise goals.

Level 1 people (human capital) prize autonomy, work well in unstructured environments and are fairly outgoing and risk-tolerant. They differentiate themselves through subtle internal competition, and they are motivated by individual recognition for individual contributions.

Level 1 culture rewards charismatic leaders and PC renegades, and it creates a gratifying work environment for them. The environment is internally competitive and lacks consistent evaluation and performance criteria. This is an "everyone for himself" information culture, where individual objectives prevail and people get information any way they can, usually based on contacts and clout.

Level 1 limitations arise largely from the natural self-interests of information mavericks, who often leverage information to their own personal benefit. Individuals flourish at the expense of the organization. The silo mindset tends to reward individual- or product-level success even as it cannibalizes other products or undermines enterprise profitability.

Because success depends on individual heroics, there is little capability for repeating successful processes unless the key players remain the same. The company is hurt every time employees leave and take their expertise with them.

Granted, organizations at Level 1 are often successful due to visionary leaders, ambitious mavericks and luck. These enterprises generally operate and make decisions in an unplanned and chaotic information environment. While many organizations still operate at Level 1, few would candidly identify themselves at that level.

Level 1	Infrastructure	Knowledge Process	Human Capital	Culture
OPERATE	Manual systems of non-networked PCs	Personal	Individual	Me

Level 1 indicators

- Individual leaders or mavericks with authority over information usage.

- Information infrastructure (technology and governance processes) that is nonexistent, limited, highly variable or subjective.

- Individual methods of finding and analyzing information.

- Individual results adopted as "corporate truth" without the necessary validation.

Level 2: the consolidated enterprise

At the second level of evolution, companies have consolidated information management across a functional area, unifying departments and implementing IT solutions that satisfy departmental needs.

Level 2 infrastructure applies department-level hardware, networking and software. Data stores and decisional applications are designed, developed and supported to serve departmental needs. Even though some of these tools may be sophisticated, such as data modeling and data mining, they are neither consistently used nor commonly available across the organization. While some localized governance of information may exist, it is inconsistent across the organization. Duplication of effort is still a problem, as are redundant tools and interfaces.

Level 2 knowledge processes consolidate data and decision making at the department level. Peers in a group do their work in the same way, using processes and systems that are consistent across the whole department. Analytic solutions such as campaign management, supplier evaluation or budgeting are being planned or implemented.

Performance at Level 2 is measured by departmental metrics. Enterprise metrics can now be calculated with some reliability, albeit with lots of manual intervention. Conflicts still exist between departments trying to answer an enterprise question, since they often come up with different results.

Level 2 people (human capital) support departmental rather than individual or enterprise agendas. Charismatic leaders still reign, but they are more likely to select and align themselves with team players rather than individualists. Team members work well together, but working cooperatively with other departments remains a challenge.

Level 2 culture embodies an "us versus them" mentality, where each department pursues its own vested interests and people are rewarded for contributing to departmental goals. Department heads make more informed decisions, but they may skew or hide results that reflect poorly on the department. Incentives are based on meeting departmental goals, even at enterprise expense. Multiple versions of the truth, "tribal" knowledge and internal politics distract the company from staying focused on the marketplace.

Level 2 limitations arise from departmental myopia: the narrow functional focus that generates inconsistent organizational results. It takes a lot of manual consolidation and reconciliation to generate an enterprise view of performance, so the cost of information, while better than at Level 1, is still quite high. Departments may decline to fund efforts that benefit other groups or distract them from their own missions.

Level 2	Infrastructure	Knowledge Process	Human Capital	Culture
CONSOLIDATE	Functional systems	Department	Functional group	Our group vs. the rest of the company

Level 2 indicators

- Decisions based on departmental orientation.

- Independent departmental islands of information.

- Departmental data consolidation and access.

- Departmental business measures are inconsistent across the enterprise.

- Multiple interfaces and data extracts from operational databases reflect different versions of the truth.

Level 3: the integrated enterprise

At Level 3, the enterprise has acknowledged the strategic and competitive value of information and has defined an information-management framework to satisfy organizational objectives. Rather than catering to individuals or departments, IT solutions enhance the organization's ability to create value for customers.

Level 3 infrastructure formalizes information management processes under a central point of control. A streamlined, enterprise infrastructure including software, hardware, databases and networking eliminates redundancy and enables a single version of the truth. IT processes are well defined and provide the audit trails, integrity and accountability necessary to support key decisions.

Level 3 knowledge processes shift from an operational focus to analytic systems. These systems report on more than just the past. Analytic systems report on the future and include "what-if" scenarios. The Level 3 organization mobilizes resources around markets and customer relationships rather than functional or product groups and fosters activities that maximize the value of lifetime relationships.

Information can be accessed through standardized applications by everyone in a decisive role. Information processes are predictable and repeatable. Data and key metrics from diverse departments can be aligned, shared and integrated in a common arena.

Level 3 people (human capital) collaborate well within their peer group, but they also think outside their functional unit about the greater good of the enterprise. They have a holistic view that enables them to understand and appreciate how their efforts contribute to enterprise goals.

Level 3 culture places a high value on the quality of information and enterprise performance results. Throughout a Level 3 enterprise, information is widely accepted as an essential tool to operate the business and create value. Training and organizational development encourage consistent access and use of data.

Level 3 limitations are more than outweighed by the advantages of achieving this evolutionary level: rapid decision making based on accurate, current, enterprise intelligence. However, cross-functional collaboration is still limited, and greater agility is still possible.

Level 3	Infrastructure	Knowledge Process	Human Capital	Culture
INTEGRATE	Enterprise systems	Enterprise	Enterprise group	All of us

Level 3 indicators

- Cross-enterprise information.

- Decisions made in the context of enterprise goals.

- Enterprise information-governance process.

- Enterprise data frameworks.

- Information-management concepts applied and accepted.

- Institutional awareness of data quality.

Level 4: the optimized enterprise

The Level 4 enterprise is nimble and adaptable, optimized for efficiency while constantly realigning with changing markets. When the market grows or adjusts, the Level 4 organization quickly adjusts and reoptimizes to the new business model.

Level 4 infrastructure provides complete context for all decision making and makes it available as the natural course of business, rather than as a hunt-and-peck process. Business systems are linked across the supply chain from back-office functions through customer touch points, thus enabling communication, data-sharing, and continuity across functional areas and extended business relationships.

Level 4 knowledge processes focus on maximizing performance efficiency and incrementally improving the quality, timeliness and availability of information. The organization has modeled all workflow interactions across the entire information value chain to develop new optimized business models. New quantitative measures, real-time analytics and closed-loop feedback processes fuel continuous improvement of those business models. Integrated customer information is analyzed to detect patterns, predict future behavior and understand customer needs for consistent and immediate customer responses.

Level 4 people (human capital) are driven, diverse and adaptable, and they thrive on new challenges. They prefer creative challenge to predictable tasks and are not afraid to take risks. They bring diverse intellectual skills to the table and use historical and predictive analysis to increase the effectiveness of their organization in an ever-changing marketplace.

Level 4 culture empowers individuals to continually make incremental improvements and gives them the quantitative information to do it well. Internal competition that once stymied cross-departmental efforts has been replaced by collaboration and interdependency. Widespread access to internal and external information provides broad context for understanding and allows communities of interest to share experiences and continuously fine-tune the business model.

Level 4 limitations stem from the organization's heightened reliance on information flow — at once a competitive advantage but also a vulnerability, should that information flow be interrupted for any reason. Furthermore, by disseminating proprietary information across shared public facilities and by drawing external business partners into the trusted "internal" network, the organization must allocate more importance to security and data integrity measures.

Level 4	Infrastructure	Knowledge Process	Human Capital	Culture
OPTIMIZE	Extended enterprise systems	Extended enterprise	Enterprise group	Our partners and us

Level 4 indicators

- Incremental improvement mindset.

- Closed-loop feedback from analysis.

- Information context based on workflow.

- Shared experience through collaboration.

- Communities of interest take precedence over departments.

Level 5: the adaptive, innovating enterprise

The Level 5 organization institutionalizes innovation and transforms the enterprise from an operational/reactive entity into a wellspring of constant, proactive renewal. The Level 5 organization has implemented a managed model for sustainable competitive advantage through continuous generation of new value.

Level 5 infrastructure is an "intelligence architecture" that is flexible and extensible to meet any integration or expansion challenge the organization might encounter. It includes a rich suite of analytic capabilities, so new ideas can be tested and refined in virtual environments rather than in concrete ones. The infrastructure provides a support network for creativity, including systems to organize and foster ideas, address legal processes and manage emerging products and processes.

Idea-generating information can be accessed from internal and external sources, in structured and unstructured formats, as well as a variety of media and languages. Proposals, pilot projects and post-pilot reviews are documented, categorized and easily accessible to all who might learn from them.

Level 5 knowledge processes use extensive data mining and analytics to model the future and minimize risk while incubating constant innovation. New business models are regularly suggested, simulated and tested. At Level 5 collaboration far beyond familiar boundaries has been institutionalized, and employees continuously surface new ideas as a matter of course. The organization routinely manages, evaluates and communicates the results of the innovation incubation process.

Level 5 people (human capital) are proactive, creative thinkers with a venture-capitalist mentality. They hold various roles within the organization; yet they can be quickly pulled together for interdisciplinary teams as needed. They focus on moving the enterprise forward while always considering new ways their expertise might create value. They are constantly contributing new ideas and shepherding viable ideas from concept to revenue as quickly as possible. They regard sidelined projects not as failures but rather as learning opportunities.

Level 5 culture embraces thinking "outside the box," where the only bad idea is the unspoken one. While not all ideas make it to upper management, the organization generates a significant amount of its growth from new ideas.

Proactive, revolutionary cultural change is not feared; it is the norm. New analytic information constantly stimulates creative thinking and action. Individual creativity, intuition and innovation are supported by a culture of inquiry, collaboration and documented experience.

The intelligent enterprise at Level 5 will often look to other industries, technologies and markets for correlating business concepts and then apply them to their business in a way that defines new value. Moreover, the patterns of innovation are embedded in all dimensions of the Information Evolution Model, so successes are sustainable and repeatable.

Level 5	Infrastructure	Knowledge Process	Human Capital	Culture
INNOVATE	Adaptive systems	Situations matrix	Dynamic network	Adaptive groupings

Level 5 indicators

- New ideas develop quickly from concept to fruition.

- Cross-industry information is accessible.

- Failures accepted as learning experiences.

- Ideas welcomed from anyone in the organization.

- Information used to forecast and manage new venture risk.

A survivalist's roadmap

Misalignment of evolutionary progress produces "dimension tension" and suboptimal results. The lagging evolutionary dimension becomes the weakest link and inevitably drags down the merits of more mature dimensions (Figure 2). An organization with a Level 1 infrastructure and a Level 4 culture will still function at Level 1.

The Information Evolution Model

Level	Level Dimensions			
	Infrastructure	Knowledge Process	Human Capital	Culture
I. Operate	Manual systems of non-networked PCs	Personal	Individual	Me
II. Consolidate	Functional systems	Department	Functional group	Our group vs. the rest of the company
III. Integrate	Enterprise systems	Enterprise	Enterprise group	All of us
IV. Optimize	Extended enterprise systems	Extended enterprise	Extended group	Our partners and us
V. Innovate	Adaptive systems	Situations matrix	Dynamic network	Adaptive groupings

Figure 3: Characteristics of each level along the four dimensions

Given that each progressive level introduces new survival advantages and value-added rewards, and given that dimension tension is an unwarranted waste of resources, how does a company progress from one level to the next? How do you get the whole enterprise to evolve in relative harmony? What high-level considerations apply?

Transition from Level 1 to Level 2

Level 1 is an individualized information environment ruled by mavericks. Moving from this level to Level 2, a departmental framework, entails the following activities:

- **Get buy-in from the mavericks.** Any change that democratizes information and standardizes it across the department will naturally be perceived as a threat to the power that Level 1 mavericks have built up. It is imperative to persuade information mavericks of the benefits of evolution, because it won't succeed without their buy-in.

- **Consolidate like information into functional systems.** Systems are usually aligned with the company's organizational structure. Departmental data repositories and applications alleviate dependence on individual gurus, streamline operating costs by reducing data inconsistency and duplication, and remove much of the penalty associated with the loss of maverick subject-matter experts.

- **Encourage analysis over instinct.** The Level 2 organization replaces gut-feel with fact-based decisions and requires an information architecture that identifies, collects and exposes all relevant data to the management team.

- **Develop departmental metrics and incentives.** Encourage these developments with enterprise-level goals and information requirements in mind so that today's Level 2 evolution will be a thoughtful foundation for the future evolution to Level 3.

The organization that successfully transitions from Level 1 to Level 2 will achieve these benefits:

- Reduced process redundancy and cycle times.

- Less time spent gathering data and more time available to analyze it.

- Lower information-processing costs and greater data-flow efficiency.

- Greater consistency and continuity within business functions.

- Improved employee motivation and confidence in results of analysis.

Transition from Level 2 to Level 3

The transition from Level 2, departmental orientation, to Level 3, enterprise orientation, is all about aligning information management strategies with enterprise requirements, without compromising departmental needs. The organization must do the following:

- **Consolidate departmental data into an enterprise view** aligned with enterprise goals that crosses functional areas and organizational boundaries.

- **Implement an enterprise infrastructure**, framework and governance standards to sustain information flow across the whole enterprise.

- **Secure buy-in from departmental data-keepers**, who may perceive the change as a threat to their status or security.

- **Develop enterprise metrics and incentives** to gauge progress, validate results and overcome the "us versus them" mentality that pervades Level 2 organizations.

At this level, the IT architecture integrates data from every corner of the enterprise — from operational/transactional systems, multiple databases in different formats and from all contact channels. The key is the ability to have multiple applications share common "metadata" — the information about how data elements are derived and managed. With consistent metadata, applications that formerly wouldn't talk to each other now contribute to shared, enterprise intelligence.

The result is a collaborative domain that links previously isolated specialists in statistics, finance, marketing and logistics and gives the whole user community access to company-standard analytic routines, cleansed data and user-appropriate presentation interfaces.

The organization that successfully transitions from Level 2 to Level 3 will achieve these benefits:

- Higher returns on customer and supplier relationships via retention and efficient supply chains.

- Faster time to market and response to market changes.

- Better customer acquisition and retention rates.

- Lower and more sustainable costs for information handling.

Transition from Level 3 to Level 4

Now that the Level 3 company has one version of the truth and an enterprise focus, they discover things that were not revealed before. Operational processes may be suboptimal or misaligned with the market. Shrinking cycle times further accelerate the pressure to optimize performance on all dimensions.

To move from Level 3 to Level 4, organizations will:

- **Expand the enterprise business model into an extended community** that includes suppliers, customers and other stakeholders.

- **Build the systems and culture to capture tacit, experiential knowledge** as well as explicit, quantitative information to expand from a data focus to one that includes businesses processes and information interactions.

- **Establish enterprise metrics** for key processes, and run the business by them.

- **Provide incentives for cooperation**, collaboration and incremental improvement.

The organization that successfully transitions from Level 3 to Level 4 will realize that Level 3 was the beginning of a journey. The preparation for the journey focuses on consolidating information (Levels 1–3) and the journey actually takes place once the data is consolidated into a consistent database at the enterprise level. Level 4 produces the first major payoffs for all the evolutionary levels that preceded it — such as significant improvements in efficiency, cost, product development cycles, customer acquisition and retention, product/service quality, and market penetration.

Level 4 goes beyond historical query and reporting, beyond simply knowing where the organization has been. It provides solid answers about where the organization and market conditions are going, through predictive analytics such as forecasting, scenario planning, optimization and risk analysis.

Level 4 organizations exploit the widest available portfolio of analytic algorithms, mathematical data manipulations and modeling capabilities. This analytic power enables them to predict future outcomes; explore and understand complex relationships in structured data and text; and model behavior, systems and processes.

The right analytical platform will offer industrial-strength analytic toolsets for quantitative analysts, as well as packaged applications that make high-end analytics accessible to business users. From the factory floor to the boardroom, all types of users can derive direct benefit from optimization and predictive capabilities.

Transition from Level 4 to Level 5

At some point, even Level 4 optimization becomes the proverbial squeezed orange. You can only wring so much return from incremental efficiency improvements. Level 4 was an essential level to support competitive price structures, but once a market is commoditized and fought on price alone, successful organizations must evolve to Level 5 innovation and renewal.

In practice, Level 5 is an add-on to Level 4 in that Level 5 organizations are good at exploring new business ideas, but once a business idea is proven, it is quickly optimized (Level 4 behavior) and brought to the most efficient level of operation.

In an innovative Level 5 enterprise, diversity is welcomed as central to success. Therefore, hiring practices must be changed to align with this demand for diversity. Processes must be redefined to support a pipeline of continuous innovation. Systems and processes must be expanded to scan and digest an unprecedented breadth of external and even cross-industry information.

The organization that successfully transitions to Level 5 will:

- Generate higher profit margins from new products and markets.

- Define new markets without legacy baggage.

- Gain first-mover advantage and upset the playing field for competitors.

- Increase market share based on sustainable, repeatable innovation.

The successful enterprise consciously and proactively moves its information-management strategy forward by moving proactively and progressively along the information evolution path.

SAS Information Evolution Assessment service

A systematic process for harmonious growth and smooth transitions starts with an assessment of your company's current status in the evolutionary process.

The **SAS Information Evolution Assessment** offers an interactive business setting where SAS consultants, experts in information delivery, work with you to develop an enterprise strategy to evolve your use of information for decision making. This assessment leverages the Information Evolution Model as the strategic framework and basis of measurement for understanding the maturity of your organization's information-delivery capabilities.

During the assessment, we lead a dynamic information exchange with your key senior business and technical managers. Though our proven consulting approach, we explore your current information-delivery environment and processes. We also help you establish a vision for using information more effectively by understanding your desired information-delivery strategy, goals and requirements. The results are evaluated and mapped to the Information Evolution Model.

SAS consultants then analyze the gaps between your current and desired information-delivery maturity level and assess how your human capital, knowledge processes, culture and infrastructure support the desired strategy. Together, we build an execution strategy for bridging these gaps and moving your organization to the desired level.

The strategy will include an immediate action plan for evolving information-delivery capabilities in your organization, as well as a prioritized roadmap for long-term deployment. The SAS Information Evolution Assessment will help you see how enterprise information can be used as a strategic corporate asset to increase profitability.

SAS has been helping customers solve real-world business and technology problems for nearly three decades. Hands-on experience, drawn from more than 1,500 expert consultants worldwide, ensures that every engagement follows proven best practices, uses time-tested methodologies, delivers tangible results and provides useful, actionable business intelligence to turn strategies into true competitive advantage.

The Information Evolution Assessment process will help you:

- Identify, prioritize and make recommendations on how to improve specific key performance indicators.

- Clarify your organization's information-delivery practices and strategy as they relate to the overall business vision.

- Assess your current IT infrastructure and capabilities and identify the gaps between that present-day reality and the information delivery environment needed to meet business goals.

- Set forth a roadmap for closing the gaps in any Information Evolution Model dimension: infrastructure, human capital, knowledge processes and culture.

The end result is an effective, efficient and structured path toward optimum alignment of information delivery capabilities to strategic business needs, taking advantage of the best in business intelligence technologies.

Closing thoughts

If Level 1 or 2 in this Information Evolution Model looked familiar, it may be because the majority of public and private organizations still operate at these fundamental levels. They are grappling with basic issues, such as finding where information resides, determining if it is even accurate and then getting disparate systems to talk to each other. Only the more progressive organizations are operating with an enterprise perspective; fewer still are exploiting that perspective to truly optimize their performance or fuel constant innovation.

The leap to Level 3, consolidation, represents the first big paradigm shift. At this level, the IT function evolves from an inward support focus, catering to individuals and departments, to a cooperative and strategic focus. This shift enhances the organization's ability to create value and profitability. However, the company that reaches Level 3 will quickly see previously hidden disconnects and inefficiencies and will realize the advantages to be gained from reaching Level 4.

Wherever you are on the evolutionary continuum, your organization probably already has the data it needs to become a Level 4 entity. It is hidden in transactional and operational systems around the company. The technology exists today to draw on all these diverse data sources, validate and cleanse that data, and apply sophisticated predictive analytics to optimize processes and decisions. That is, to operate solidly at Level 4. This unifying intelligence architecture transforms pools of sundry data into meaningful business insights that transcend departments, functions and technology silos.

The right intelligence architecture will work with your existing systems and databases and add a layer of end-to-end intelligence to support Level 4 processes and culture. If this Level 4 infrastructure also has user-friendly interfaces designed for your diverse users' needs, you'll win over the "people" part of the equation as well.

The technology options are available now, and the path is yours to choose. You can plan to evolve from Level 1 or Level 2 into a Level 3 organization or proceed directly to Level 4, with a planned migration to elements of Level 5. The choice is yours, but it must be a conscious choice. If you do not choose to plan and manage your own information evolution, you risk being driven to it by competitive pressures that produce only reactive solutions.

Enterprises with a proactive information-management strategy can keep a strategic edge over reactive competitors. With this Information Evolution Model as a guide, you can assess where your organization is in this evolutionary continuum and plan a systematic evolution path — before the competition does.

About SAS

SAS is the market leader in providing a new generation of business intelligence software and services. SAS solutions are used at more than 40,000 sites, including 96 of the top 100 companies on the FORTUNE 500®, to develop more profitable relationships with customers and suppliers; to enable better, more accurate and informed decisions; and to drive organizations forward. The SAS Intelligence Platform and SAS Intelligence Value Chain leverage the investments you have already made in existing systems and applications, adding a layer of intelligence you can't get anywhere else. For nearly three decades, SAS has been giving customers around the world *The Power to Know*®. Visit us on the Web at **www.sas.com**.