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“Business processes have been around since the beginning of business. Business Process Management Systems are the next step in making them explicit, executable and adaptable.”

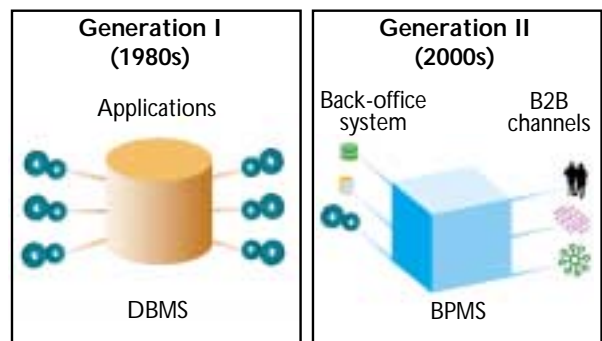
The evolution of business processes from description to data to smart executable code –

is this the future of systems integration and collaborative commerce?

Business processes are back in vogue. Enterprise Application Integration (EAI), workflow and B2B integration (B2Bi) vendors are rushing to re-cast their systems integration tools as Business Process Management Systems. Application vendors are examining strategies to build next generation solutions in a manner that exploits Process Management so as to provide increased agility and flexibility. At the heart of this trend is an innovation called the Business Process Modelling Language (BPML). In this article we examine how this development promises to provide companies with, quite literally, a 'make it so' button.

By guaranteeing the consistency of a business process throughout its lifecycle, BPML allows business unit leaders, process analysts and technical staff to share ownership of the design, deployment and improvement of business process. These directly executable business models point towards new techniques for systems integration both within the enterprise and between businesses. Analogous to the management of business data in a DBMS (see figure), we expect the new breed of Business Process Management Systems (BPMS) to support the full lifecycle of process discovery, design, deployment, execution, maintenance, analysis and optimisation.

Today, it would be unthinkable to attempt to develop an enterprise data model and deploy applications based on that model without a DBMS. Soon, it will be equally unthinkable to attempt to model enterprise processes and deploy applications to fulfil roles in those processes without a BPMS.



- Emergence of a new IT capability**
- 1980s dedicated mission critical data management infrastructure
 - 2000s dedicated mission critical process management infrastructure

ATTRIBUTE	DBMS	BPMS
Model neutrality	Data model neutral (supports any data model)	Process model neutral (supports any process model)
Information model	Relational tuples Object oriented Others	Finite state machine PetriNet Others
Standards	SQL	BPML, BPQL
Implementation	From many vendors	From many vendors
Mission critical	Reliable, scaleable, distributed, transactional	Reliable, scaleable, distributed, transactional
Applications	Built on DBMS	Built on BPMS
Tools	Many data management tools, reporting, analysis, data modelling	Many process management tools, reporting, analysis, data modelling

A DBMS and BPMS can be viewed as having similar attributes

The way we have achieved systems integration in the past is not adequate for the new task

According to the recently released CSC annual survey of critical issues in information management (www.csc.com/survey), the most important issue for senior IT executives is "Connecting with customers, suppliers and/or partners electronically". Today, instead of integrating systems within the enterprise, IS departments are being called upon to connect their multiple internal systems with the multiple systems of multiple customers, suppliers, and/or partners. We now confront a multifaceted many-to-many integration problem that is dramatically harder to solve than problems we have faced before, for example, implementing EDI with close partners.

Moreover, this new integration requirement is not about simple handoffs: the future of e-business is ever more collaboration across the entire supply and value chain. This picture of frictionless co-operation between partners requires an unprecedented level of systems integration, both among the many internal enterprise systems and with the multiple systems of supply chain partners. This is a classic many-to-many problem and is extremely difficult, and expensive, to solve. Indeed, the pace of business change could mean that complete enterprise integration of this kind might be impossible.

We need to simplify our approach if we are to achieve the level of integration demanded by today's business (and e-business) landscape. Early work by CommerceNet (<http://eco.commerce.net>) showed how focusing on the documents exchanged by businesses could reduce the work needed to integrate systems¹. However, to achieve the benefits of collaborative commerce and supply chain integration we need more than document exchange.

Vaguely expressed within the eCo specification was a concept called 'orchestration', the process by which businesses agree how their web services interact within a shared business process. Recent developments in the technology and use of business processes by

the Business Process Management Initiative² (www.bpmi.org) offer a new approach to Web Services Orchestration and, more significantly, to the entire field of enterprise and systems integration. Today, the dual drivers of internal integration and collaborative commerce point towards Business Process Management (BPM) as an abstraction above the separate disciplines of middleware, message brokers, EAI and B2Bi strategies. Directly executable business models are close at hand.

Our management of business process has been evolving and with it our understanding of the nature of business process itself

There have been four stages in the evolution of our use of business processes:

- Business Reengineering
- Enterprise Resource Planning and workflow
- The development of tools for the disciplined capture, editing, and design of business processes and applications for loosely coupled execution
- The emergence of a common language to describe business processes and a Business Process Management System to execute and evolve them.

The first two stages saw process change as a one-time event. Reengineering was often too traumatic to face more than once, and both the IT infrastructure and the new processes were too inflexible to accommodate further changes in business objectives. Later ERP and workflow installations were deemed by CSC Research Services to have the flexibility of wet concrete before installation – but the flexibility of dry concrete once installed (see www.cscresearchservices.com/foundation/library/107/RP01.asp). Business processes were something we drew on whiteboards during reengineering, and something we put in binders during ERP. Now, in the third stage, new software tools capture business processes as data that can be edited, integrated and shared (see panel).

Footnotes

1. The CommerceNet eCo Framework set the stage for much of what we know as B2B technology today. The Web Services trend driven by Bowstreet and the Directory Services Markup Language (www.DSML.org) together with Universal Description, Discovery and Integration (www.UDDI.org) build on the eCo Framework. B2B leaders such as Commerce One participated in the development of eCo through their acquisition of key XML technologies such as those from Veo Systems. Veo's XCBL (www.xcbl.org) closely mirrors the semantic recommendations of the eCo group and is the basis for the marketplace architecture of Commerce One's Global Trading Web. The eCo framework is described in more detail in the article on page 31 of this Journal.
2. CSC and Ontology.org are founder members of the Business Process Management Initiative. Howard Smith (howard.smith@ontology.org) represents CSC within the BPMI.

TOOLS FOR THE CAPTURE, EDITING AND DESIGN OF BUSINESS PROCESSES AND APPLICATIONS FOR LOOSELY COUPLED EXECUTION

New software tools help firms capture business processes as data that can be integrated and edited as business needs change. These technologies point the way towards direct deployment of business models. With the introduction of new standards, they could be extended into other application areas and all enterprises in the extended supply chain.

Proactivity Inc. (www.proactivityinc.com) has helped a global manufacturing company to build a repository of processes that can be combined and updated as new situations arise. Two-dimensional visual diagrams are too simplistic to capture processes spread over numerous partners. Instead, process consultants use Proactivity's 'Microsoft wizard' type of tool to drive structured interviews with people in many parts of the organisation to capture individual process fragments. These separate data collection efforts are integrated to provide a complete view of the process, not just that seen by one department. Visual diagrams and reports based on this integrated view are generated automatically.

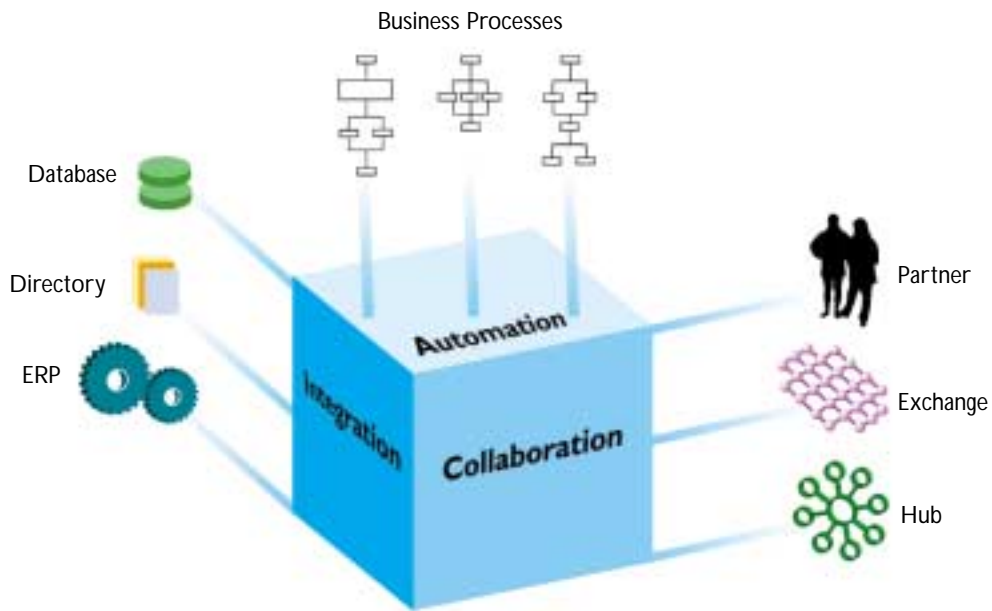
Knowledge Technologies Inc. (www.ktiworld.com) has a strong background in knowledge-based engineering and has dramatically reduced design cycle time at companies such as BAE SYSTEMS (www.baesystems.com/static/engstor.htm). KTI's Knowledge-based Process Modeler (KPM) aims to provide strategic management of dynamic engineering design processes, which are frequently chaotic and non-linear, and have not been well served by project management or workflow tools. A pilot implementation at a major auto manufacturer performed well. The engineers used KPM to drive the process, ensuring software and data was sent to them as they needed it, and appropriate midstream corrections could be made as required. These corrections were informed by KPM's modelling, simulation and scheduling capabilities, which show the complete downstream consequences of alternative actions. The result is an effective way of managing chaotic processes so that no one is surprised down the road, in an environment in which everyone in the process is involved and can contribute.

This third stage greatly increases our ability to deal with change. Numerous vendors are adding process or workflow tools to their products and integrating them with Business Rules systems, such as Black Pearl and Blaze Advisor, to increase their flexibility. EAI, middleware, integration broker and B2B vendors have each been busy developing or acquiring process management components and then integrating them into their product lines. However, there are problems aligning the deployment of these 'smart' solutions with the business processes that we wish to support. The required systems integration is a many-to-many problem and once implemented may not readily support business change. Many of these product extensions are only included to assist the deployment of the solution itself. In many cases they only allow processes to be modelled from the localised point of view of a specific application. Thus business processes typically exist as hard to change code, embedded in applications and middleware.

What is clearly needed is a common language – a Business Modelling Language – for describing business processes so that all companies and products can leverage the work. Without this, we are producing non-interoperable applications and have no means of modelling, deriving or adapting the end-to-end process.

A common language to describe business processes and a Business Process Management System to execute them are emerging

As we said in the Foundation Report on Workflow and Business Design Tools (www.cscresearchservices.com/foundation/library/112/RP06.asp), we make progress in systems architecture when we make explicit that which was embedded. Operating systems extracted memory management, file access and the graphical user interface from applications. Database Management Systems (DBMS) removed the management of data and the management data schema. In addition, the DBMS added resilience and manageability to the application, and increased flexibility somewhat by allowing data configuration tables to be modified outside the application logic. Transaction monitors similarly took over responsibility for application resource management. It is time to do the same with business processes.



A BPMS encompasses three capabilities: process integration, process automation and process collaboration

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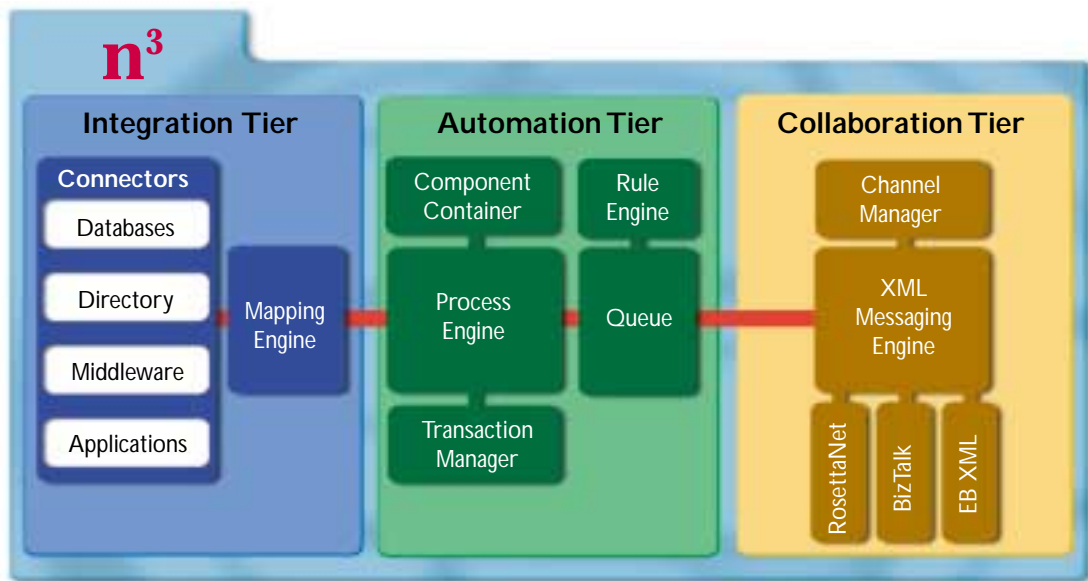
Business processes must be made explicit and they must be managed within a **Business Process Management System**. Such a solution must scale to the whole enterprise, must sit comfortably in the enterprise IT environment and must leverage all application functionality in a distributed environment. This implies far more than a new 'process' data type in the existing database management system. Processes integrate data flows, events, state transitions and transactions. Abstracting process from an application touches many other aspects of the IT architecture. Message oriented middleware, transaction monitors and persistent stores are all involved.

The technological innovation to make processes explicit is at least as complex as the innovations that led to the creation of databases, transaction processing (TP) monitors and middleware. Similarly, just as database systems and TP monitors have become sophisticated products in their own right, rich in management services, so it will be with Business Process Management Systems. Although there is some controversy over whether a well defined and separate BPMS will emerge as a distinct vendor/product category, similar to the DBMS or Application Server category, the

removal of business processes from applications once and for all is much overdue.

The Business Process Management Initiative (BPML.org)

Recently, vendors such as Intalio (www.intalio.com) and BusinessThreads (www.businessthreads.com) have developed concepts and technology that represent business processes as directly executable code or interpretable instructions. Intalio is leading an effort to standardise a modelling language for business processes (www.BPML.org) and develop a fully functional, scalable and resilient Business Process Management System (BPMS). Such a system will make it possible to integrate heterogeneous systems within and between companies by connecting them at the business process level rather than the application software level. For Intalio to be successful it must support all seven aspects of process management: discovery, design, deployment, execution, maintenance, optimisation and analysis. Therefore we expect BPMS vendors will create alliances with complementary technology partners, and a new industry will grow up around process management, as happened with data management.



Intalio's n3 implements the complete BPML specification – end-to-end collaborative processes across the networked enterprise

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The BPMS is coming to market just at the time many Global 2000 enterprises are deploying EAI solutions or a common B2Bi platform as the means to manage processes across multiple applications and multiple business partners. However, EAI focuses upon application integration, which is not the same as collaboration. B2Bi solutions treat other partners as applications, not businesses with their own complex processes to manage. These solutions do not provide an integrated view of an enterprise's total process based activities. Many companies using them are failing to integrate, and as a result many marketplaces have insufficient liquidity.

Enterprise integration is a many-to-many problem in at least four dimensions:

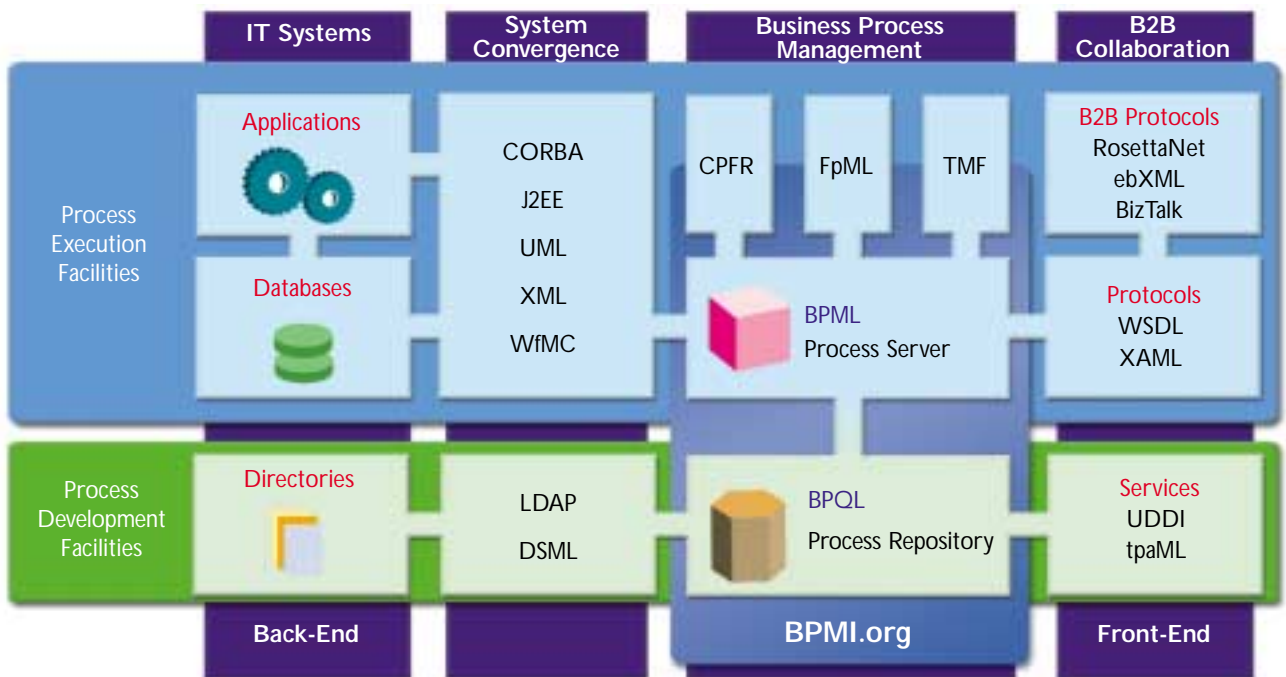
- Multiple back-office systems (databases, legacy, packaged applications, custom applications, etc)
- Multiple business processes (ERP, SCM, SFA, CRM, numerous custom processes and associated legacy systems)
- Multiple B2B channels (buyers, suppliers, resellers, marketplaces, portals, ASPs, etc)
- Multiple enterprises (trading partners).

All of this represents unprecedented complexity and today's solutions are not up to the task. Point-to-point middleware creates a complex unmanageable architecture and message brokers are only able to achieve the aggregation and regulation of interactions

between applications at the messaging level. It appears that the only way to resolve the multi-dimensional and multi-faceted integration problem is to move to the process level. By focusing on process management we appear to have the greatest chance of providing agility and supporting business change, particularly in the B2B arena. Only process design and direct process deployment will give us insight and knowledge of our business operations and the ability to adapt processes in real time.

We expect that a dedicated Process Management Infrastructure within the enterprise – a BPMS – will emerge. Just as no one would attempt the development, deployment and refinement of an enterprise data model without a DBMS, a BPMS is mandatory to work towards an enterprise process model. The BPMS will allow us to manage both integration (loosely coupled rationalisation) inside the enterprise and collaboration outside the enterprise. This is not as grandiose a vision as it may seem. Like the DBMS before it, the BPMS will be a practical tool useable at all levels: workgroup, business unit, division or enterprise.

Furthermore, we define collaborative commerce as the ways in which enterprises interact electronically to plan, design, build, buy, sell, distribute, and support goods and services. Collaborative commerce deals with the re-design and integration of business processes across enterprise boundaries. It frequently involves reallocating tasks from one enterprise to another as well as the closely coordinated cooperation of multiple enterprises in a single business process. Collaboration is rich in process. Any solution that claims to address collaboration must address process.



**Business Process Management resides between system convergence technologies and B2B technologies
– BPML seeks to leverage existing internal IS systems and emerging public interface standards**

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Key to Intalio's effort is the Business Process Management Initiative (www.bmpi.org) which has attracted 80 companies (including CSC and Ontology.org as active founding members) to help develop and standardise a Business Process Modelling Language (BPML). The BPML specification was first released to the public on 8 March 2001, creating much interest. In the next issue of the journal we will report on how this new language is being used.

BPML is a meta-language for modelling business processes, just as XML is a meta-language for modelling business data. BPML itself uses XML technologies. It provides an abstraction model for collaborative and transactional processes based on the concept of a transactional finite state machine. It provides a unified process model, from visualisation to declarative modelling to process execution, that supports analysis, prediction, simulation and monitoring. With BPML it will be possible to model and deploy 'smart' adaptive processes. To provide these benefits BPML has a rigorous mathematical foundation³.

BPML is a meta-language from which higher level or more specific process modelling languages can be defined. This is important

because different industries have different views of what constitutes a business process. For example, in the Finance sector the Straight Through Processing (STP) model is prominent; in Retail, CPFR (Collaborative Forecasting, Planning and Replenishment) is more appropriate; in Telecommunications, service provisioning demands a different approach. BPML for process, like SQL for data, is a simple foundation that can accommodate this richness. In addition, BPMS systems will let businesses define and deploy processes from their own perspective and in support of their own strategic business objectives, very different from processes hard-coded into application solutions. The BPMS is therefore 'process neutral'; that is, it can accommodate any process. A BPMS should not force the business user to adopt a pre-defined process that is shrink-wrapped with the solution, published in a standard and therefore both accessible to your competitors and inaccessible to you to tailor it.

Adaptive systems lead to more agile enterprises and more agile IT infrastructures. We believe that making processes explicit through BPML has the same effect. It gives business people an integral role, if not complete control, in the development of process

specifications, their deployment and evolution. BPM encourages continuous business process improvement. It supports highly iterative IT projects that can start small and then grow. Through this approach, the business builds a library of reusable process assets and works towards directly executable process models.

Future scenarios and today's deployment of BPMS

We do not know where this journey will end, but already a number of Process Service Providers (PSPs) are emerging and we expect specialist BPML and BPM solutions consultants to appear soon. BPM opens new possibilities for attractive forms of outsourcing or insourcing: for example, a process improvement services provider (PISP) could work symbiotically with an operational business.

Initially at least, BPMS and BPML will be introduced primarily for their systems integration potential and support of B2B activities.

Deployment will be similar to that of any new IT system, or could be delivered as a Managed Service.

Today a multitude of business requirements, often expressed as new processes or changes to existing processes, drive the IT agenda, and result in largely isolated activities associated with middleware, applications or database. Activities circle around different IT functions and divisional responsibilities with the result that the original intention – the business process – is often lost. With BPMS and BPML, business changes would be implemented directly and the ongoing need to align business architecture and IS architecture would be much reduced, since this is the responsibility of the BPMS itself. Indeed, BPMS vendors will stand or fall on how well they achieve this separation of business and technical layers.

INTALIO AND THE BUSINESS PROCESS MODELLING LANGUAGE (BPML)

Intalio (www.intalio.com) grew out of the open source movement and now sponsors exolab.org and the distributed object group (<http://dog.intalio.com>). The Exolab group focuses upon Java and XML technologies and is leading projects such as OpenEJB, OpenJMS and OpenORB. The group has developed an open source implementation of DSML that is "part of a larger project called Castor, which links Java objects, XML documents, SQL tables, and LDAP directories". In particular, it has suggested that if processes are formally defined (in the sense of a mathematical formalism) they can be executed reliably by a Business Process Management System. Further, this could be done in a way that would layer cleanly on top of existing systems, providing a new and powerful 'glue' for systems integration. Although this sounds ambitious, it is analogous to using SQL to encode and manage business data in today's relational Database Management Systems: only through a formal foundation, SQL, could we achieve effective data management strategies. Intalio developed the first version of BPML, the Business Process Modelling Language.

Intalio may be instrumental in creating not only a new business language but also an entirely new industry based on the BPML.

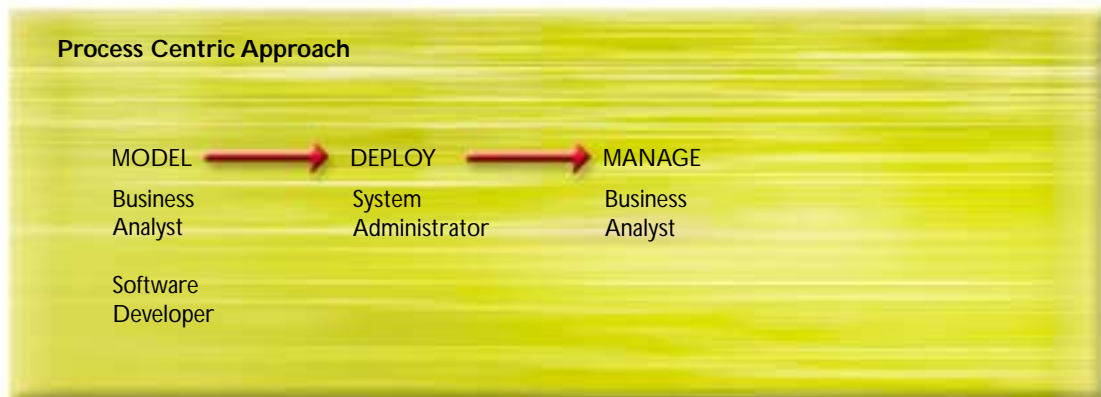
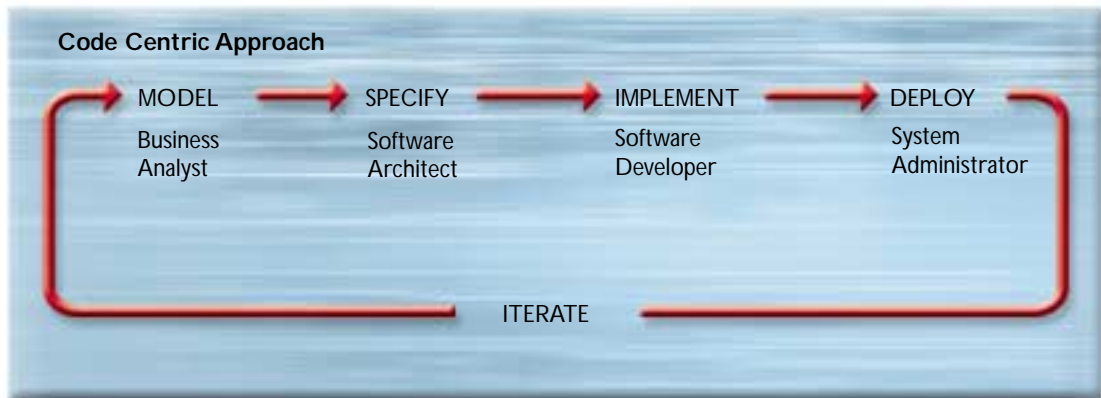
Just as a wide variety of tools and methods emerged around the DBMS so we expect the same to happen for BPM. These analysis and management tools will have direct access to the dynamic processes of business, not the static content of data warehouses; and the potential for business insight and organisational change is correspondingly greater, particularly if the processes are instrumented across entire commerce chains, not only in the enterprise. One vendor, Tilion (www.tilion.com), is attempting to do just that⁴.

The integration of technologies from companies such as Intalio and Tilion has enormous potential. Yet the greatest benefit will be the ability to change processes directly, without coding, in response to the changing business landscape. If your company is considering an EAI, B2Bi or ERP II programme, then take account of the development of the BPMS and of BPML. BPMS is not a workflow solution, nor an EAI solution, a B2Bi solution, an application server or a code generator yet it subsumes or inter-operates with many of these. (A glossary with definitions of terms used in this article can be found on the Research Services web site: www.cscresearchservices.com/process).

Footnotes

3. A detailed description of BPML is beyond the scope of this article. Tutorial materials and BPMS vendor profiles are planned. Sponsors are encouraged to join the BPML.org if process management is key to their enterprise integration or collaborative commerce (B2B) activities. Contact howard.smith@ontology.org or the BPML directly (www.bpml.org).

4. Commerce chain analytics and its relationship to Business Process Management will be subject of a future article. See Tilion white paper (www.tilion.com).



The process centric approach reduces handoffs, reduces the need to iterate and increases the involvement of the business


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Many of the day-to-day activities of BPM centre on the process repository. Business unit leaders and process analysts will refer to the repository, using visual or wizard based tools to examine processes, generate reports, make changes, prepare processes for deployment and monitor and maintain them during execution.

Operationally oriented staff will be involved in the process deployment and thereafter take responsibility for maintenance activities. Sometimes it will be necessary to intervene in the running process, for example when an unexpected condition arises. Business staff involved in the process or for whom the process has implications may interact with process steps through the company intranet, or may have work allocated to them through a work flow management system.

We predict that Enterprise Process Portals will become commonplace, providing employees with multiple views of the processes in which they play a part, and the wider context of their work. Indeed, 'process portal' products are already being developed by early stage vendors. A wide variety of complementary solutions will enrich BPM in the enterprise and weave it into the fabric of day-to-day activities. For example, business analysts and process specialists will use process analysis and reporting tools to prepare reports of possible process improvement strategies. Management will be directly involved with the BPMS, authoring changes for deployment.

Unlike in the past, if approval is granted, implementation of change will be a straightforward process, and could be



immediate. The BPMS will become a focus for integrated teams oriented around different processes (such as supply chain, customer, distribution, customer support) as opposed to teams from the different stovepipe disciplines (IT, procurement, business operations, finance, customer relationship and so on). In addition, rather than being the exclusive domain of elite corporate groups, process improvement will reach down into the enterprise and to staff at all levels, who could be involved in suggesting new and more efficient ways of working. Expect surprises, especially from junior staff. BPMS, like intranets, will be a major source of democratisation in the enterprise. We view these as positive benefits.

The BPMS will be the digital nervous system of the enterprise. In the boardroom, unprecedented visibility and insight into the business at all levels will become possible, similar to achievements in the past through Executive Information Systems. In smaller companies or in high growth technology companies, expect to see BPM 'consoles' used by active 'process aware' CEOs. Similarly, IT operations staff will be able to focus upon managing and rationalising the infrastructure without having to worry about application level changes demanded by line managers.

BPMS and BPML will also open up the possibility of dynamically adaptable processes. Instrumentation of data sets inside the enterprise and in the immediate supply chain will make it possible to modify processes as soon as the need is identified. Because the BPML has a formal foundation, it can be used to encode sophisticated enterprise 'smart strategies' that are triggered by events. We expect these to focus initially on particular process areas (such as customer, distributor and supply channels) but eventually may also address the overall business model. Automated process adaptation could be driven by external factors such as events in the extended supply chain or even economic trends in the industry sector. For example, component futures price and availability data from marketplaces and exchanges could be used to modify the procurement process. Our future research will identify scenarios for smart process adaptation at all levels, from enterprise, to closest partners, to the supply chain, to the industry sector, to the economy. Dynamic switching between alternative business strategies, predefined in BPML, is a promising possibility.

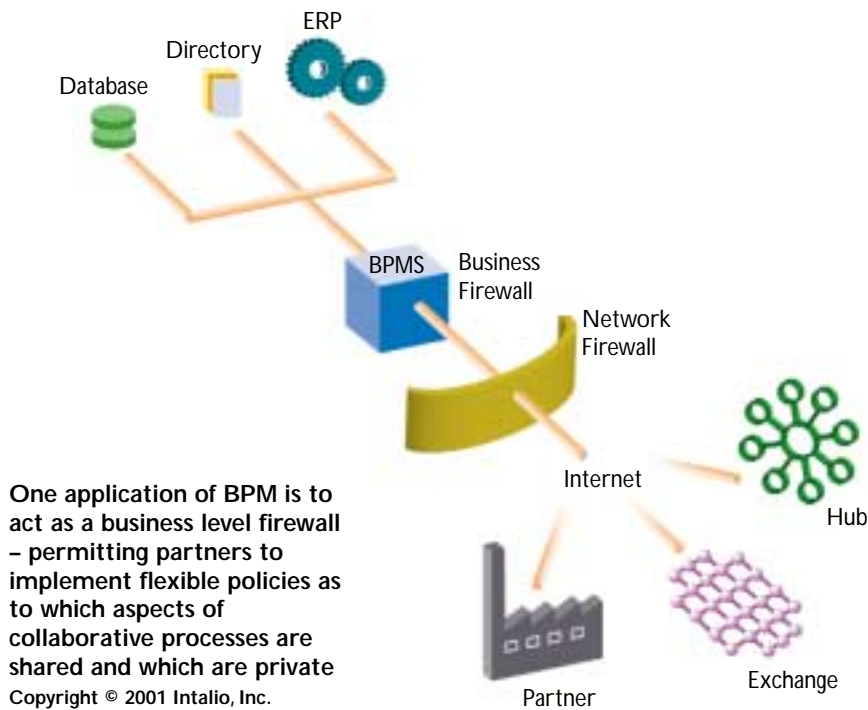
Ultimately, a business @ the knowledge level may have a self-regulating capability, where the system and its managers, across multiple organisations, are constantly aware of its state and the environment in which it operates. For a wide range of conditions the system will be able to adapt 'automagically' to changing conditions, or migrate to new business activities through automated deployment of new processes. This will free business managers to concentrate on identifying and exploiting new business opportunities. They will be supported by a new level of collaborative dynamics information from multiple enterprises. In addition to providing information to identify new opportunities, the system will help managers understand what should remain the same. As we said in our report *Componentising your software and your business* (www.cscresearchservices.com/foundation/library/comp/RP12.asp), "An agile organisation is one that better understands what doesn't change."

Such a system rests on an explicit (external) representation of business process, such that many software elements can read, write, execute and adapt these processes directly. BPML is the first time such a language has been specified that leverages modern XML technologies. Compare this to today's environment, where processes are piecemeal, embedded in applications with no connectivity or integration across them.

When collaborative commerce is taken to its extreme, the enterprise may transform itself into a networked enterprise – externalising (outsourcing) all non-core business functions. Yet enterprises can get great benefit from process management while stopping short of this point.

Process service providers and process publishing

We make the predictions above in order to stress the advantages of moving the enterprise to a process powered future. No one knows yet where these new technologies will take us, but considerable innovation lies ahead as BPML becomes integrated with techniques from other domains, such as dynamics and reasoning (AI). One feasible future is that some enterprises become process experts, able to execute processes on behalf of other businesses, similar to contract manufacturing today. They will use process descriptions from the BPMS repository to demonstrate their efficiency.



The BPMS will provide a business process level firewall between internal systems and the networked enterprise outside. Instead of providing your partners with a VPN to address your internal systems directly, you will provide them with access to your processes. In a multi-party relationship each participant will have its own private implementation of the shared collaborative processes with a public interface to ensure co-ordination during execution. This will make it possible for firms to do business without revealing the ‘crown jewels’ of how they actually carry out their processes.

While this information hiding capability is attractive, we expect that there will be increasing market pressure to reveal exactly how you perform your processes, not just what the result looks like. Due diligence will take on a new meaning and prospective partners will want to gain access to the processes that you have expressed in BPML, both to estimate your capabilities and to understand if there are new opportunities for process integration or re-location. Your process may no longer be your most important product; your ability to execute existing processes and help create new ones may be. Fortunately, the nature of the BPM approach is that the boundary between what

is public and what is private is completely fluid and can be adjusted to be whatever makes sense at that time. There will be interesting issues around what happens when you can read, evaluate, edit, and run the processes of your competitors and partners on the fly!

Like all futures, these possibilities will be driven by commercial realities. One fascinating possibility is that new networked enterprises will be constructed by looking at process synergies rather than supply chain connections. We can imagine electronic meetings where potential partners review each other’s BPML looking for fragments that can be combined in new and productive ways.

What should you do next?

We now have the prospect of new powerful tools for process discovery, design, deployment, execution, maintenance, optimisation, analysis, adaptation and transformation. The best way to learn about these new capabilities is to use them. There are several immediate possibilities for exploring business process management and process management technologies in your organisation:

ACTIVITY	SUGGESTION
Process discovery	Initiate a process discovery and documentation activity using tools that develop an editable repository of process assets and consider the implications of managing these using BPML. There may be possibilities for legal protection of unique processes
Intellectual property	Consider using BPML to document and formalise processes which you believe require protection as intellectual property assets
Systems	Start a pilot deployment of a BPMS to support a specific process management domain
Enterprise infrastructure	Examine existing or planned EAI, B2Bi or ERP implementation strategies in light of this innovation and Business Process Automation, separately and/or in collaboration with vendors with whom you are working
Organisational	Review the organisational change elements of moving to the 'Process Managed' enterprise Process. Discuss with your existing process modelling tool vendors and e-business technology partners their support for BPML and their perspective on the topic
Industry standards	If you are working in a cross-industry standards or XML group, examine the relevance of BPML for defining process models
Marketplace exchanges	If you are involved in an industry or consortia marketplace, examine the benefits of BPMS and BPML to systems integration among partners
BPML.org	Consider whether your company or industry should participate in BPML.org, focusing on industry or application domain specifics
Strategy	Begin thinking about how you will compete in a world where business processes can be captured, created, demonstrated, shared, instrumented, analysed and deployed both within and across enterprises.

Possible activities to begin exploration of business process management

As with any innovative project, we advise a disciplined approach. Specifically we recommend that you rigorously and frequently ask the five questions of the innovation clarity framework that we first described in the November 1999 issue of the *Foundation Research Journal*:

- Supply – Do you know what is now possible with BPM and how to get it done?
- Demand – Do you understand and manage the demand, both internally and externally, for BPM and related technologies, particularly EAI, B2Bi and workflow?
- Risks – Do you appreciate the risks, especially those of project management, in deploying BPM in the enterprise?
- Connections – Do you see broadly the connections to other applications, and do you focus narrowly on what you should do first?

- Approach – Do you know the right approach to use in communicating about this process innovation, given your users and audiences?

For more information

Although sponsors will need to develop answers to these questions that apply to their particular situations, there will be significant benefit in sharing across companies. To facilitate this we are hosting a page on the Research Services web site where we will post answers as they emerge as well as links to additional articles, perspectives and resources relating to the management of business process. Let us know your experiences with business processes. Visit www.cscresearchservices.com/process.