

IBM Smart Analytics Cloud — A “Big Bang” Delivers Internal Business and Performance Clarity

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Management Summary

There comes a point, in societal development, when new approaches to infrastructure are needed. This is usually a matter of prosaic efficiency, not a matter of politics, though the change often lights the fires of political passion. As a town grows, for example, it often sets up water and sewage utilities. This is efficient since homeowners do not run the risk of a private well going dry or an overloaded septic field. In addition, the quality of water supplied and septic processing effluent can be monitored, with problems more easily corrected. It is an *industrial approach to infrastructure*. Homeowners can do what they like with their share of the water, except in times of drought. It should not be thought of as a *control issue*, but as a *vehicle for more efficient supply*. It might not be cheaper than drilling your own well or installing your own septic field, if you are lucky enough not to run into a *maintenance* problem. **It is the sharing of infrastructure that makes it more available and more efficiently delivered.**

The mode of business has changed from ten, or even five, years ago. Companies, even big ones, are stretched thin – both locally and in their global operations. *Lean inventories* of assets of all kinds, including people, have supplanted the old ideal of *adequate robustness* to meet any contingency. Now, the efficiencies of *just-in-time* thinking are applied more broadly. Shedding of assets via outsourcing gives costs that are more predictable (even if less controllable).

Particularly for large enterprises, the mode of operations management has also changed. More partnering and joint initiatives, plus an increasing adeptness at juggling the ballet of multiple IP portfolios, spread the risk of new initiatives, but also complicates the maintenance of an inherently diverse system of record. *Organizational coherence* and, in many industries, *regulatory compliance* dictate that organizational documentation be parsable. Like the town considering new systems of infrastructure, **enterprises now must reconsider how to manage their informational operations.**

As a large global company, IBM has experienced all of these kinds of challenges. With its Cognos acquisition and the development of cloud computing alternatives, it saw a chance to rethink support of a deft, timely, and rapidly-evolving reporting and business analysis capabilities. This would support business intelligence for the growing number of IBMers and partners in a way that would change, substantially, the economics of doing so – a *Big Bang* with far-reaching and continuing repercussions. It included a new kind of asset aggregation – one that harvests the economic benefits of centralization, leaves users firmly in control of their capabilities, and is evolvable by design. Like a municipal water system, it supplies something in a resilient way at a good price, but does not dictate how to use it. For more about the design and implementation of IBM’s Smart Analytics Cloud, please read on.

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The Changing Nature of Business Information and Its Use

The Mission-Critical Imperative Has Changed

It used to be that data analysis was a backward-looking spectators' sport. It was all about reporting what had happened (maybe for scorekeeping and maybe dissecting the statistics and reasons – all very noble and important but not mission critical on the battlefield of a hyperactive and fickle marketplace). **Now, everyone wants to know when something is about to happen before it happens, i.e., in time to do something about it.** Bakeries want to know what is selling faster (or slower) than they expected, in time to adjust the next cycle of production. Retailers want to use their data warehouses to spot important trends in real or near-real time. **The need has changed from something just analytical to something mission influenceable. Business operations are the battleground for the new mission-critical imperative of Business Intelligence (BI).**

The difference from before is that the pace of everything has accelerated. No vibrant (i.e., responsive) business can analyze information periodically, say once a month, as was so common just a couple of decades ago. Insight is needed in many places – in real or near-real timeframes. For example, it is too late to suggest to customers that they might like to add some needed items to their online shopping cart after their order has been placed. BI is needed to provide the insight into what others have been ordering, as the buyer adds items to the shopping cart. At this holiday shopping season, it is important to know *what's hot* and *what's not*, at both a store level (where restocking or substitution can be initiated) and back at the corporate headquarters (where reactionary intervention (a good thing) can be exercised to optimize the situation for the customer, for the sales team, for the suppliers, and for the bottom line).

This change, which has been ongoing for years but now is a mandatory “support requirement” for operational success, requires consideration in two dimensions – informational and operational.

- **The informational dimension deals with needs for analytical conclusions from business data.** You might say this dimension is about *business intelligence*.
- **The operational dimension deals with how you satisfy the needs of the informational dimension.** It is about the infrastructure or vehicles for delivering the operationally-needed

answers in a usable timeframe. Thus, it about *how it is done, where it is done, and who gets it done.* It is also about *the efficiency level at which it gets done* – what it takes (in resources) to achieve the informational objectives.

Each dimension will be discussed.

The Growing Challenge of Operational Information

Digitization (of everything) offers a wealth of data points about operations never before available. This new information does not lessen the need for reporting disciplines and business analysis – it heightens it. It does not simplify the task of organizational management – it extends it.

The information gathering and reporting now possible at a detailed level can characterize fully the many small events that can lead to a situation. However, such useful aggregation is only possible if data is comparable in units of measurement and the analysis basically is congruent in method. **These new and so mission-critical requirements are served badly by a plethora of diverse analytic tools and data definitions, because diversity doesn't necessarily add benefits. However, it usually adds to the costs and complexity of execution. In addition, unreconciled data definitions lead to misinformation when seemingly similar data is aggregated.**

The Wider Use of Business Information

It is not just the shape of the business information landscape that has expanded, but also its use. Aggregated over time, data points reveal trends that can support both predictive analysis and a more nuanced view of market situations, going well beyond key performance indicators. In the aggregate, analysis of detailed information can support timing and other business decisions that cannot, and should not, be made just on a gut feeling. With this kind of information use, a manufacturer can catch defects early and a service organization can understand and refine the cadence of its projects.

The Broader Applicability of Information in a Business Setting

This kind of analysis is not just for senior officers of a business, but for everybody. CIOs acknowledge BI's importance not just for the sales force support but also for operational transparency. The blurred view of trends that comes from incomplete data or inconsistent analysis no longer will not do. Localization for particular situations and geographies must be part of the design. The information set also must keep up with new

initiatives from their outset. None of these requirements can compromise the consistency needed to be able to roll up local information into regional and national levels.

The Increasing Value of Business Information

Today, innovation is focused on getting the most out of fleeting opportunities. Long-range plans are based on probabilities and appetite for risk. A macro sense of orderliness (and control) of a market can act like blinders to new opportunities. Ambitions must be tempered by wariness. **For large enterprises, the ability to develop and leverage adaptable but consistent processes is key to supporting opportunism on a large, diverse scale. To do this, all parties need a timely and complete knowledge of what is possible. With pervasive intelligence via agents, instrumentation, and tags, measurement of operations can be both precise and pervasive – but, to make this kind of information useful, the analytics of *Business Intelligence (BI)* is needed.**

The Growing Challenge of Operation Efficiency

If meeting the needs of BI was the only business challenge, life would be tough. However, meeting the BI challenge is complicated by doing it well operationally. Let's divide the operational dimension into its key components:

- 1. Infrastructure on which BI is delivered.**
- 2. Software that constitutes the delivery vehicle.**
- 3. Data that is being analyzed.**
- 4. Application programs, analytical procedures, and business processes (which constitute the three “Ps”) that exercise all of the above, in search for business intelligence for better understanding and decision-making.**

For each of these components, you need to know: *Who is responsible for the component (operationally)?* This question can best be answered in segments.

Who is responsible for the Infrastructure?

On this issue, the world seems to be divided into two belief paradigms:

- (a) Because BI-based decision-making is mission critical, *the infrastructure must be locally managed.*
- (b) Because BI-based decision-making is mission critical, *the infrastructure must be centrally managed.*

Notice that the argument is not about whether

BI-based decision-making is mission critical. Today, that is a given in most enterprise equations. **The debate is about (a) where it is located, (b) where it is managed, and (c) who sets the rules of engagement.**

In a computing era dominated by virtualizations of all kinds, the importance of *where it runs* seems a little dated. Whether it runs in a cloud access remotely or whether it sits in a local data center (or closet), the geographic differences generally are transparent to BI users. Yes, there are issues of security, access, sufficiency of resources, and, of course, cost, but these parameters can be assessed and addressed independently of the infrastructure's location. **In a nutshell, you should not care about locality, as long as the parameters listed above are being satisfied.**

Yes, there is a great sense of pride in the ownership of that locally procured and provisioned set of IT resources. Pride is good but not sufficient if efficiencies have not been optimized. **Infrastructure optimization is what is important, as long as it does not penalize BI-based decision making, in terms of getting it done when it needs to be done.**

Efficient infrastructure can be done locally, i.e., departmentally. However, this is hard to do well and the likelihood that is being done well in all BI-inclined departments (across an enterprise) gets smaller as the number of BI-involved departments increases. Since the infrastructure truly is invisible (unless it is represented by a desktop computer on someone's desk), **what really counts is infrastructure delivery to the BI users. They want access to the infrastructure in a timely manner and at reasonable costs (i.e., for less that they could do it locally themselves). Whether the delivery is driven by a bank of servers or a large scale-up computer somewhere in the cloud (whether external or internal), hands-on operations of this infrastructure really adds no advantage, if the cloud delivery is done right.**

Who is responsible for the Software that analyzes the data?

In the 21st Century, we all want to do it *our way*.¹ *Our way* may have been decided personally, it may depend on the analytics tools for which you have been trained, or it may have more to do with inertia, changing what we now do will require more effort (and risk) than sticking with what you have. While each of these reasons has some validity, having it your way can come at too high a

¹ That decades-old *Burger King* commercial jingle “Have it your way” now might be ringing in your head, as it still is in ours.

price. If 20 departments in an enterprise each do it their way, you may find that many different solutions are being used, duplicate infrastructure and operations personnel may be involved, and, most importantly, there may be 20 silos of information, surely some of it redundant and potentially out of sync.

Bigger is not always better - but it usually is.

We are all aware of the server and storage consolidation that has been happening over the last decade. It is recognized that doing infrastructure on a large scale and sharing the resources is the way to go – almost all of the time. Standardizing makes consolidation easier. Standardizing on a single set of BI tools allows for more consolidation, more data sharing, more resource sharing, more expertise sharing, and, usually, better results. However, even if the results were only as good as they were before the standardization, it would still be a winning scenario, for there are many costs, such as the expertise needed to support multiple toolsets. Moreover, when procuring software, it is easier and usually more advantageous to negotiate with one tool vendor than with five or more. You'll almost always end up with a better deal.

Who is responsible for the Data being analyzed?

Local (departmental) control of data is an important battleground. Few departments are willing to throw responsibility for underlying data over the wall to someone with different goals. **This is not about an unwillingness to share; it is about a well-reasoned unwillingness to delegate responsibility for managing and preserving mission-critical data.** Someday, maybe, this will change but, for now, this responsibility probably needs to remain with the departments. **You can use centrally-provided infrastructure and standardized BI software but you need to retain control of what is stored in the BI repository.** You need to set the rules on sharing, within the enterprise compliance guidelines, of course.

Who is responsible for Application Programs, Analytical Procedures, and Business Processes?

How BI is used is the final frontier – the last set of responsibilities that you should delegate to a third party.² This is where the rubber meets the

road, so to speak; where local institutions (i.e., each department within the enterprise that is reliant on BI) may have more insight or more focus on how to foster better decision-making through BI – in each local context.

What is interesting in IBM's internal *Blue Insight* initiative is that it supports both the efficiencies of centralization and, fully, the leveraging of local expertise, as you will see shortly by IBM's example (as described in the next section). It is a bi-directional optimization that, before plentiful networks and pervasive virtualization, would have seemed impossible. This, together with a mandate for evolvability, is what makes this initiative a new paradigm.

Some Conclusions on Operation Efficiency

Just as the reasonableness of the decision to tie into municipal water supplies and sewage systems (rather than doing it yourself) makes a lot of sense, **it makes sense to move toward shared BI infrastructure and common BI software.** You still need to be responsible for your data, for controlling (and paying for) what resources you consume (i.e., what flows through your spigot), and for figuring out what to do with your now centrally delivered BI infrastructure (i.e., what you do with the resources that flows through the spigot). **Let the professionals deliver the infrastructure to you - you need to focus on how to use it and how to make better decision through better analytical understanding.**

At this point, you may be agreeing, intellectually, with the conclusion above. However, you want proof that this makes sense, beyond the declarations and logic presented so far. That's where IBM's internal BI efforts offer some hard proof. Read on for the proof!

Dissecting The Big Bang That Became Blue Insight

IBM is a mammoth, worldwide enterprise engaged simultaneously on many fronts. Yes, it is an arms supplier, so to speak, in IT infrastructure and BI software, to mention just two realms. However, this giant faces all of the same challenges that other large enterprises face, when it comes to being successful at the BI implementation game.

IBM has undergone a great IT transformation, independent of what it has done internally with BI. It has taken out thousands (more than 3900, at the last counting) of smaller servers and moved their applications and data to 10 or so System z mainframes. This is an important story in itself but only the backdrop for IBM's BI transformation. The

² There are some good exceptions to this rule. Within your industry, there may be specialists or consultants who can distill wisdom from your data (usually, in ways that you cannot, either because it is all too new or you are too far behind the learning curve).

important bottom line is that IBM, like most other enterprises, is working hard to become more efficient. The big backdrop is IBM's *Smarter Planet* effort, of which smarter IT and better information management are important legs.³ With that as the backdrop, let's dig into IBM's Blue Insight story.

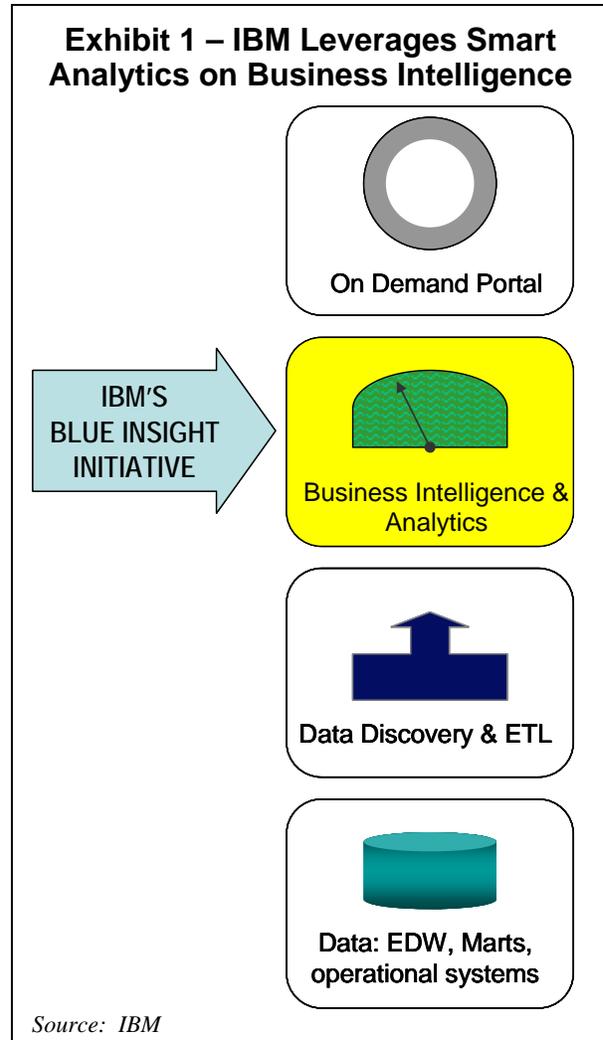
No doubt, IBM has been doing BI internally for decades, as it was integral to business operations and even may have been strategic in some ways. However, the change of everything to "warp speed" has driven the BI users to act more broadly and more boldly. Many paths were taken in pursuit of better BI. That's the BI "user" side of the IBM's two-sided coin. Many things were going on in pursuit of useful BI, much duplication of data and efforts, including many software packages and platforms deployed. It sounds like what's been happening at many if not most of the larger enterprises. *Out of control?* Probably. Enterprises have been driven by the down economy to fix this, except for IBM, because they also own the other side of the coin, as a BI "supplier". The two-sided coin story at IBM has yielded many exportable conclusions, even to those enterprises that only deal with the user side of the coin. Here's why.

Two years ago, IBM bought Cognos and added it to its information management software collection (which already included DB2 and IMS, to name just two members of the existing collection). The software battlefield lines were being drawn, in part, by IBM's many acquisitions of software vendors and integration of the acquired product lines into multi-faceted strategic offerings suited for a Smarter Planet. That was all to be expected on the software supplier side of the coin.

However, one thing became very clear, and more so after as we all entered the "new era of cloud delivery". The point of clarity was sort of forced on IBM by its two-sided coin. *How can it continue to use a potpourri collection of BI tools (internally) when it sees itself as the premier provider of BI tools and solutions (externally)?* The slow economy accelerated the reaching of the conclusion to consolidate on its own (Cognos) offerings. That's the first half of the "Big Bang" happening in BI at IBM (and the focus of this bulletin). Now, IBM calls its internal Smart Analytics Cloud Initiative *Blue Insight*.

The second half of IBM's BI Big Bang has to do with BI delivery, i.e., *how the insight processing and delivery is made possible opera-*

³ Another contributor initiative is IBM's *Globally Integrated Enterprise*, though GIE has been focused more at the data consistency end of the problem than on the tools' use.



tionally. Dozens of BI delivery systems (which had naturally evolved into siloed solutions) stand out as an enterprise-sized wound in need of accelerated healing. *How can the most diversified and successful IT provider on the Smarter Planet not follow the advice that it has been giving for a long time: centralized delivery of IT solutions makes better sense (most of the time)?*

The IBM executive team made it clear. It preferred that its many operating divisions and departments use IBM's software and hardware products (something not hard to imagine) and let this be known throughout the Company. Naturally, it makes political sense to use IBM's own BI offerings. Thus, it chose to take out competing BI solutions and standardize on the considerable breadth of analysis, reporting, and performance management tools that Cognos had to offer, on IBM infrastructure, of course. The first part of the Big Bang happened already happened. The operating divisions have had some time flexibility but everyone was going to get on board. The forced march was on.

The remaining question was *where* (or, maybe, *how*). Where was this Cognos suite going to run (on which computer platforms, both by type and by ownership? (Or, maybe better stated in the Cloud Era, how was it to be delivered to the BI users? This was less of a forced march than a reasoned one. By centrally presenting an undeniable superior solution (in terms of delivery and cost) and then waiting, *they* (the departments and BI users) *will come*. That is the second part of IBM's Big Bang story, what they offered,

The BI Big Bang became IBM's (internal) Smart Analytics Cloud Initiative (and now called Blue Insight), which is described below.⁴ In this issue, the delivery vehicle will be mentioned, but not discussed in depth. That will be done in a subsequent bulletin.

In summary, IBM's execs felt that a complete redesign of the maintenance and delivery of BI application tools was needed to meet business, IT process, and financial realities, as well as 21st Century user requirements. **Blue Insight's service delivery needed to be part of a new paradigm that is an essential part of IBM's corporate strategy.**⁵ When combined with IBM's activities in cloud computing and coupled with the highly-secure, well controlled, share-everything architecture of its mainframe known as *System z*, they quickly settled on the components with which to build a system that would change the economics and the business model, and permitted the evolvability needed to provide business intelligence services to its very large (200,000) base of stakeholders.⁶ That's how the Big Bang happened. Let's see what can be learned.

21st Century Requirements

In the context of 21st-Century business, centralization is not a concept of location, but of aggregation. Its benefits are consistent accessibility and systemic evolvability of parts, as well as of the whole. **Because the aggregation is of tools and trusted data sets, and not of process or whole "solutions," control rests where it belongs – with people using the data and tools, not with the infrastructure's caretakers, who have other challenges.**

In Blue Insight, IBM's recentralization alone is

⁴ IBM is now using the Smart Analytics Cloud moniker to describe its *external* BI cloud solutions (offerings).

⁵ As distinguished from IBM's product strategies, including IT infrastructure and BI.

⁶ For some background reading on System z, see **The Clipper Group Navigator** dated February 28, 2009, entitled *The Mainframe at 45 Delivers Thirteen Dimensions of Excellence*, available at <http://www.clipper.com/research/TCG2009009.pdf>.

projected to save a great deal of money, measured in tens of millions of dollars over a five-year period (according to several IBM presentations). While the details of the savings are important to scrutinize (and we have), **one set of conclusions weighs heavier than all of the details.**

1. **It is better and cheaper for the enterprise to standardize on one set of BI tools than on many.**
2. **It is better and cheaper for the enterprise to centralize and share its BI delivery vehicle (systems) than to allow for many siloed business intelligence deployments on many separately-managed systems.**

According to IBM, they will save more than \$20M over five years. That is a significant sum for any large enterprise, although it will not be without many transitional pains. (No pain...no gain!) They estimate that software licensing, port count, and cables all will be reduced by over 90%. The physical network connectors were reduced by more than half. The use of System z10⁷ added significantly even more savings. **The IT infrastructure savings of more than \$20M from delivering BI services from an "IBM mainframe cloud" are significant.** While one might like to analyze the savings in detail, saving even \$10M (less than half of what they claim) is still a lot of avoided expenditures. Less easy to quantify and verify are the management cost savings from multiple instances of Cognos on multiple platforms, and management of the diverse dashboards that were developed to address departmental requirements, and the consequences of multiple and inconsistent analytic tool heritages.⁸

Savings on this kind of scale gave IBM's constituent organizations the incentive to go through the hard work of determining actionable requirements of 21st-Century business realities. High on the list of the Blue Insight's new requirements were quick deployability to new user groups, a subscription model of standard services, and a standard way of onboarding new services and data types, all without breaking existing business processes, security, or compliance with government regulations. These all led to the design and solutions that followed.

Criteria and Requirements

To initiate the project, IBM set up a *Business Intelligence Competency Center (BICC)*, where all

⁷ The applications in this implementation are running on Linux, not on z/OS.

⁸ The details will be discussed and procurable options will be analyzed in a follow-on bulletin.

stakeholders could set common criteria for the project. This comprehensive approach, as contrasted with a pilot project, ensured a scalable approach and dealt with early challenges via a large jury of peers. The design that a BICC produces would support centralized *and* decentralized IBM personnel as well as delivery partners.

Criteria

The basic criteria for the project were standardization, centralization, and virtualization. There are no surprises here – but the new parameters of what these standard approaches would be used for is revolutionary. **Executive sponsorship by IBM's CIO demanded that IT culture change requirements be articulated clearly.**

Requirements

1. Centralized services must be delivered in a mode of self-service – a pull, not a push. Under this mandate, IT becomes a warehouse of tools and processes – but not necessarily all processes. How the tools can be used is a matter for the end users to decide. They are using aggregations pulled from a joint repository of common elements (in this case, performance and analysis tools, that all can use).

This is very different from *heritage IT*, which traces its roots to *data processing*. **Aggregation (along with virtualization) is essential parts of the cloud approach to IT, and comprise a cornerstone of the cloud's attractive economics.**

This mandate is to be supported by the following disciplines.

- **Governance of licensing and infrastructure delivery of BI components must be regulated.** No *ad hoc* initiatives can be a part of the Blue Insight's cloud - they must be planned and onboarded in a standard, optimized process. (See third bullet.) This takes more costs out – both of deployment (the onboarding) and of ongoing maintenance. The latter add up to a significant cost savings over time.
- **The project must address the problem of organic growth (uncontrolled proliferation), by offering a better paradigm, where evolution is essential, but managed, component.** Custom add-ons and one-off configurations reduce organizational transparency and add support costs.
- **There must be sufficient control points in procurement and infrastructure delivery to support, not just chargeback, but it**

also must include quality-of-service measurements by the provider and service ratings by the consumer. Evolution becomes part of the status quo.

- **An inventory and review process of planned enterprise-wide investments in BI must be kept available to all parties.**

This approach puts the emphasis on evaluation and evolvability by building rating and accountability (not to mention chargeback) into the system. It keeps the focus not just on the adequacy of the tools, but also on why people are using them. These elements are the basis of a living system as opposed to a brand new legacy.

2. Not all services for a particular business segment have to be controlled by the cloud organization.

- The cloud provides the tenant with a central repository of tools, not with complete solutions.
- The tools will evolve as needs evolve.
- What users do with them is a separate evolution.

Many users may need to do more with the data (visualization, etc.) than is supported by tools held and managed in the cloud. Departmental use of additional (externally supplied) BI applications, such SAP's *Business Objects*, is supported in this initiative.

This is the same imperative that has been behind IBM's stubborn support for heterogeneity – only by cultivating an acceptance of “other” can you leverage new capabilities from other sources without great effort.

This mandate also allows IBM to address the problem of disparate Business Intelligence and Performance Management (PM) skills acquired over decades, by creating an opportunity-rich journey, not an imperative. It allows the project to begin using data as-is. Any other approach would make the project much more difficult from the outset.

3. The project must control the rising costs of delivering business intelligence and performance management on an ongoing basis. Enough money will be saved by this approach to change the financial profile of technology use within IBM – but the habit of cost cutting must be sustainable, so that this cobblers' children will have a wide and evolving choice of shoes.

Additional capabilities will be added to the Blue Insight cloud over time. A data prepara-

tion functionality (transport and ETL⁹) to optimize the data quality of the as-is data sources will be an early enhancement to the design.

IBM has standardized Blue Insight's delivery on an IBM hardware and software stack that will be discussed in detail in our forthcoming follow-on bulletin. For now, just think Cognos on Linux on System z.

IBM's Phased Deployment

Submitting the plethora of departmental requirements and aspirations to the disciplines of standardization, centralization, and virtualization resulted in an executable, three-phase plan. IBM is currently in Phase 2.

Phase 1 (3-6 months)

IBM started by considering the users who would be the tenants of the new cloud. The first Performance Management step was to consolidate and centralize the Cognos PM applications that were being used, using existing data as-is. Onboarding users started with IBM's integrated supply chain (where there are enormous business benefits and cost reductions to be had) and financial management, which has been working on the Globally Integrated Enterprise concept for some years now. IBM's goal is 120,000 participants by the first half of 2010.

In this phase, IBM worked to identify processes to be included, and to standardize the transition of the onboarding process. While doing this, IBM identified services to be included in the catalog that IBMers will use to pull the functionality they need. Some services are more granular than others.

Phase 2 (6-12 months)

At present, IBM is in Phase 2. Having created a reusable onboarding process, they are now seeing where and how it can be automated. They now are creating the *Service Catalog*. At this time, they are bringing the Corporate Headquarters Integration Team into BICC, which will probably add momentum. They are also starting on a *Lotus Notes* integration project.

Phase 3 (> 12 months)

In phase 3, IBM will broaden the scope and develop a standard ETL process to support Data Warehousing services. Many *Optim* processes will be available as services to optimize this inherently complex undertaking. They will also include the metadata discovery that will let Business intelligence address unstructured as well as structured

data.¹⁰ Their goal is to evolve the BICC into an *Information Management Competency Center (IMCC)*.

Conclusion

Scrupulous attention to meeting a full set of requirements – *what must be done* – accompanied by a willingness to think opportunistically about *how and where it is done*, underlies many recent innovations in technology, from microprocessors to clouds. The same strategy underlies all successful Internet-based business plans. IBM's hybrid melding of central and local capabilities supports both the breadth and rapid cadence of this initiative. It is a proof point not just for the cloud approach, or rationalized applications, but also more broadly for a new operational support paradigm.

Business Intelligence, by its nature, has a distributed access requirement that is suited for the cloud paradigm. By its broad relevance to a vast variety of employees, it is ripe for a more flexible, lower cost mode of use. The IBM Blue Insight cloud, by some disciplined yet creative thinking, meets some old and new challenges in a way that can address them fully, and opens new opportunities to use business information to do business better. Consider how a combination of visionary and pragmatic thinking, grounded in the specifics of immediate need, and cost constraints, could benefit your organization. And look for the implementation details to be discussed in an upcoming **Navigator** bulletin.



⁹ Extract, Transform, Load.

¹⁰ This is a huge undertaking, and one IBM is uniquely equipped to undertake. In the past several years, it has spent billions of dollars acquiring and developing a full set of information management tools. It has supported such industry standards as UIMA (Unstructured Information Management Architecture) and DITA (Darwin Information Typing Architecture). A full description of all its efforts in the area of business information would be a paper in itself.

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