



Enabling effective Asset Lifecycle Management in utilities and transport

The BT and Oracle approach



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SUMMARY

1.0

Executive summary

“FE [FIRSTENERGY] DID NOT RESPOND TO THE LOSS OF ITS TRANSMISSION LINES BECAUSE IT DID NOT HAVE SUFFICIENT INFORMATION OR INSIGHT TO REVEAL THE NEED FOR ACTION.”

Source: U.S – Canada power systems outage task force. Final report on the August 14 2003 blackout in the United States and Canada. Causes and Recommendations.

Many industries’ business operations require the deployment and smooth-running of large quantities of capital equipment and infrastructure. To succeed, such businesses depend on the efficient and reliable interplay of very complex processes and interactions across their geographies and are dominated by distributed inventories of capital equipment that depreciate over periods of time measured in decades, not years.

Organisations with this critical dependence and management focus on large asset inventories are sometimes termed ‘asset-centric organisations’ and for them, the planning and operation of both capital assets and capital investment is the major factor in overall corporate performance. This need, coupled with the emergence of challenging new business drivers like regulatory compliance, increasing stakeholder value and new competition demands a modern approach as is embodied in a unique framework called Asset Lifecycle Management (ALM) which integrates the technology, experience and know-how of two industry giants – BT and Oracle.

WHAT IS ALM?

ALM is a series of systems, processes and associated technologies designed to provide a comprehensive, flexible and dynamic capability for managing an organisation’s assets – from planning through to decommissioning. Together, BT and Oracle have developed a measured, low-risk, world-class solution to the most pressing and challenging asset management problems.

ASSET-CENTRIC ORGANISATIONS IN THE GLOBAL SPOTLIGHT

August 14th 2003 saw the most extensive North American power outages in recent memory – between 30 and 50 million people in Ontario and Northwest USA lost power for up to a day. It was global news and the ensuing investigation singled out the pitiful state of the energy provider’s information infrastructure for censure:

Even the US President was involved: “It’s a wake-up call,” Mr. George W. Bush said. “The grid needs to be modernized, the delivery systems need to be modernized. We’ve got an antiquated system.”

In September of the same year, Italy was hit by an unprecedented blackout which stranded over a hundred trains, trapping thousands of people, and cut phone, power and communications lines. In Greece, just one month before the Olympic games, a blackout shut down the Athens metro and closed many hospitals. In 2004, the US courts imposed the largest non-compliance penalty ever against a group of private water companies for violations of the federal Safe Water Drinking act.

In the UK there have been a series of well documented failures of utility networks where lack of appropriate asset information has contributed to both the cause of the failure and the ineffectiveness of the response.

In transport, the UK has sadly suffered many notable fatal incidents in recent years, with events like the Potters Bar rail crash raising infrastructure and governance debate at the highest levels.

Are these isolated episodes – the inevitable result of running immensely complex around-the-clock operational networks in over-demanding regulatory regimes? Or are they, and similar incidents, the external symptoms of a deeper malaise – the consequences of lack of investment, inappropriate maintenance and long-term asset degradation?

Such events, together with commercial disasters such as the collapse of Enron have propelled asset-centric organisations into the spotlight and increased stakeholder scrutiny on the management and focus of assets across the enterprise. The attention on assets has never been so intense, at a time when quite probably, capital assets across the industry have never been so stretched. And the situation gets worse every day.

CONCLUSION

So as a result, utilities and transport organisations are scrambling to become more asset-centric, seeking to gain greater visibility and control of their vast, distributed network of physical assets.

However, in most cases these organisations are held back by their IT. Technology is preventing rather than enabling change, as years of under-investment and decentralised development mean that utilities and transport companies frequently lack accurate, comprehensive information on asset condition and operate inadequate systems to effectively manage assets throughout their life.

BT and Oracle have developed an approach to meet this challenge, using tried and tested technology components and processes. This white paper examines the challenge in detail, and the nature of BT and Oracle's approach.

ARE THESE ISOLATED EPISODES – THE INEVITABLE RESULT OF RUNNING IMMENSELY COMPLEX AROUND-THE-CLOCK OPERATIONAL NETWORKS IN IMPOSSIBLE REGULATORY REGIMES? OR ARE THEY, AND SIMILAR INCIDENTS, THE EXTERNAL SYMPTOMS OF A DEEPER MALAISE – THE CONSEQUENCES OF LACK OF INVESTMENT AND LONG-TERM ASSET DEGRADATION?

2.0

In perspective: business drivers and challenges

ONLY MARKET CONDITIONS CAN DICTATE WHETHER MONEY IS SPENT ON NEW CALL CENTRE TECHNOLOGY OR ON INCREMENTAL ASSET REPLACEMENT PROGRAMMES – AND MARKET CONDITIONS HAVE BEEN BRUTAL IN RECENT YEARS.

MARKET CONDITIONS

Businesses must operate under the mixed influences of powerful constraints that compete for management time and resources. Such constraints invariably tug the business in opposing directions – an improvement along one axis will generally degrade another – and this interplay is at the core of the challenge faced across the industry.

Among some of the key constraints confronted by today's utility and transport companies are:

- **Regulators:** Utilities and transport organisations are faced with increased regulator demand to deliver more for less over shorter time scales – punitive measures can include severe fines for serious mistakes or non-compliance.
- **Shareholders:** Investing in an asset infrastructure for the long-term future can reduce short term shareholder distributions. At the same time, investors are demanding increased returns, innovation and a defensible position against risk.
- **Customers:** Customers and the capital markets are ever more critical of service levels and increasingly unforgiving of service failures.
- **Competitors:** New, leaner business models are encouraging the emergence of competitors employing novel and disruptive business strategies. What's more, globalisation of markets has resulted in an influx of international competitors with different financing and newer technologies at their disposal.
- **Changing demands on infrastructure:** climate change for utilities and changing demographics and work patterns in transport put different workloads on existing assets.

Finally, there are the assets themselves. Many of the assets in utilities from generation and production through to distribution, waste disposal and transport are operating beyond their expected life. How long these assets will continue to work without systemic and catastrophic failure is unknown.

In transport, there are similarities in that many of the assets are in use beyond their expected life, but the assets themselves are different. Frequently transport companies are trying to manage both fixed and mobile assets. Significant investment is being made, such as in new mobile assets including trains, buses and trams which are relatively new. However, the processes to support and manage these assets are the bigger problem.

DEREGULATION AND CHANGING BUSINESS DRIVERS

Deregulation across the UK utilities and transport sectors has resulted in the need to question established practices and adopt a changed approach to business. As companies become increasingly governed by the needs of their regulators and of the open market, so their business drivers evolve – it is no longer enough to justify decisions and action on the basis of engineering excellence alone.

The years since deregulation have favoured two distinct operational philosophies. First, spurred on by the need to improve efficiency, increase dividends and maximise profits, businesses concentrated on doing what was necessary to deliver value to their shareholders

and maximise shareholder return. Later, in the grip of tighter regulation, revenue restrictions and the need to modernise customer service, companies turned their energies towards whatever was necessary to delight and retain their customers.

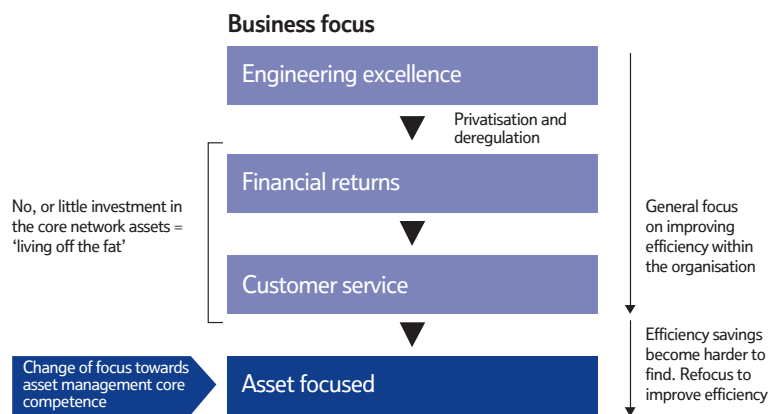


Fig 1: A return to asset-focused thinking

At the time, both philosophies were sensible and appropriate to the dominant business conditions. However, having focused objectives necessarily means paying less attention and allocating fewer resources to some other parts of a business, especially when short term goals can seem more important than strategic concerns. Only market conditions can dictate whether money is spent on new call centre technology or on replacing specific assets or investing in systems that enable improved management of all assets – and market conditions have been brutal in recent years.

Flavours of this story have played across many sectors since deregulation and in many cases, it is now over 30 years since major capital infrastructure investments were made. Ageing asset infrastructures present a challenge to all modern asset-centric organisations at a time when companies are running out of options. Businesses sense a new commercial environment in which success lies in the direction of increased effectiveness, extended network performance and a concentration on core competencies.

For listed organisations, assets form a major part of their balance sheets, degradation in perceived asset value causes dramatic impact to share prices. This is particularly apparent with utilities and power generators, where asset performance and revenue have a causal relationship. If market capitalisation drops due to concerns over the underlying asset base (and implicitly, the ability to manage and support these assets), then that organisation's cost of borrowing goes up: which means asset investment becomes more expensive and so a vicious circle of decline is created.

Asset Lifecycle Management is also intrinsically linked to any organisation's customers. A burst water main, signal failures, power cuts and telephone exchange outages: all of these asset failures impact customers. The negative effects on customer service are damaging; at the very least, handling large numbers of customer complaints creates its own cost and management burden, let alone regulatory pressure.

Asset Lifecycle Management is ultimately driven by customer demand: customer demands for improved quality can result in new legislation on water quality or greenhouse gas emissions for example. Growing passenger, subscriber and customer numbers create revenue, but push increased load onto the assets. And in some cases, the demand patterns themselves are changing. Climate change means in the UK we no longer have relatively steady, predictable rainfall patterns; we are increasingly moving to more irregular bursts of rainfall, more akin to tropical weather patterns. For the water companies, this presents an emerging asset management challenge: to efficiently store and hold water for periods of low or non-existent rainfall, and to 'crisis manage' near flood situations during spikes of high rainfall.

For electricity utilities, climate change will cause summer loads to increase as more energy is used for cooling. As a result, the window in which major maintenance and replacement programmes can be done is shrinking, so putting more strain on the network.

All of this points towards a new view of a business as an entity where sometimes – just occasionally – it is right to believe that assets themselves are the most important assets.

THE ASSET TIME-BOMB

For many utilities, this is the nightmare scenario – a major failure of large parts of the network occurring unexpectedly: caused at least in part by ageing assets failing to meet operational demand.

Why now? Firstly, originally well-engineered assets are coming to the end of their natural lives. Secondly, insufficient investment in previous years has increased pressure and degraded performance. Thirdly, changes in customer demand patterns put more operational stress on parts of the network. Finally, the increased throughput of capital equipment networks has increased the strain on the assets themselves. For many organisations, the crisis point termed 'the asset time-bomb' is fast becoming a management reality, and while an asset time-bomb may be triggered by an external factor, such as extreme weather conditions, or abnormal load demand, it is often the underlying causes that make reacting and recovering from the event so difficult.

As a result, most asset-centric organisations have realised that becoming asset centric means focusing on the assets across their whole lifecycle and not just on operations and maintenance as is today's normal practice. In reality, this means refocusing their attention on the planning and design parts of the lifecycle.

THE ASSET LIFECYCLE CHALLENGE

In an asset-centric organisation, asset planning is a critical capability. If a company's asset policy is not aligned with its business strategy, then the value of all subsequent asset management and operations is reduced. Ineffective asset management can be very costly to the business in terms of:

- Time and materials
- Network performance
- Health and Safety risks
- Legal/financial penalties

The diagram below illustrates how the business impact and risk of a decision vary depending upon the stage of the asset lifecycle reached. Early in the asset lifecycle, when strategic decisions are being made, the impact and risk of each decision is very large, since they determine how resources will be allocated. Later, when the asset reaches the end of its life, the impact of decisions is correspondingly smaller because in most cases it is destined for decommissioning anyway.

Similarly, the picture also shows how the cost of changing a decision varies throughout the asset lifecycle. Early on, changing your mind is cheap because few resources have been committed. Later, when resources have been committed to a decision, the cost of changing a decision rises, since resources will have to be augmented or replaced. Finally, towards the end of the lifecycle, changing a decision becomes slightly cheaper again because the natural lifetime of the related asset is coming to an end.

WHILE ASSET DATA AND INFORMATION MANAGEMENT IS INCREASINGLY RECOGNISED AS A CRITICAL CAPABILITY FOR ASSET-CENTRIC COMPANIES, FOR MANY IT REMAINS A WEAKNESS BECAUSE OF THE INABILITY TO RETRIEVE CONSISTENT ENTERPRISE-WIDE ASSET INFORMATION 'FROM THE SENSOR TO THE BOARD ROOM'.

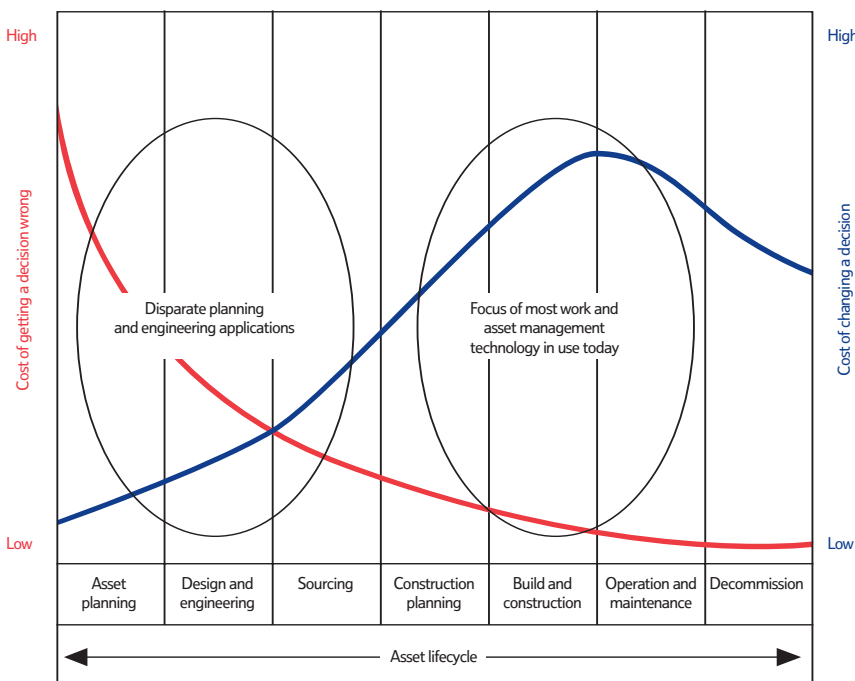


Fig 2: Technology in the asset lifecycle

For most companies the focus has been on seeking to squeeze costs out of the operational work, even though available savings are small. The ‘big ticket’ benefits are to be found in matching the asset strategy to meet corporate goals: programme and project planning, organisational structures and strategies, sourcing of people and materials.

THE INFORMATION TECHNOLOGY CHALLENGE

Traditionally, there has been a separation of corporate financial systems, procurement, HR and asset management. Technical asset data is often split between above ground systems for discrete plant items and below ground network systems held in proprietary geographical information systems (GIS). There is often little or no linkage with the cost of doing work, the impact on customers, or corporate budgeting and planning. Such applications have usually concentrated on assisting operational management rather than attempting to help direct change, and as they have matured, many have become inflexibly embedded in the infrastructure, creating isolated application silos that are hard to break down. Today, a great deal of the technology employed in work and asset management does not assist the really key business activity of supporting change, and empowering the kind of institutional agility utilities and transport companies will need through their next business cycles.

In transport companies, the applications tend to be geographically silo-ed. Many transport companies have grown by making regional acquisitions. A bus company for example, which may comprise of a number of acquired businesses, will tend to have different systems that hold the information on its assets. So to see a holistic picture (even down to ‘how many buses do we have?’) can be challenging.

The mismatch between the functionality provided by monolithic or geographically silo-ed software packages and the functionality needed to run the business has exposed what is often termed as ‘the IT capability gap’.

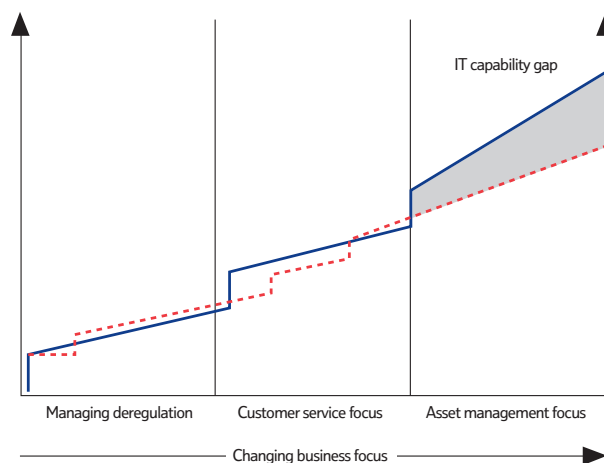


Fig 3: The IT capability gap

SYMPTOMS OF THE IT CAPABILITY GAP

The pain of inadequate technology is found in different areas. Symptoms of this can include:

- Design based on incomplete understanding of life-time cost and performance
- Programmes that are developed without regard to financing or resource constraints
- Extensive changes to projects during execution

On a more ‘tactical’ level, organisations could be suffering from a high number of repeat engineer visits, due to inefficient scheduling. This in turn results in increased travel costs, lower workforce utilisation figures, and longer lead times for asset repairs. Organisations could find that they are paying for extra volumes of overtime and extra contractors in some areas of their operations, whilst having an over-supply of resource in others. Unplanned ‘emergency’ maintenance is frequently symptomatic of ineffective IT. Assets usually require emergency work when they have degraded over a period of time, and often these earlier recorded problems have not been passed onto planning, or even not been recorded at all. They may be an increasing number of health and safety risks, as engineers work on equipment that present dangers which have not been logged effectively for future reference.

Other symptoms

- Difficult to monitor and enforce service level agreements with subcontractors
- Inconsistent decisions being made because reports using different databases gave conflicting information
- Construction and maintenance programmes not being synchronised
- Engineering planners and designers in one region using different standards and analysis tools to other regions
- Purchase of assets that may be cheaper to procure but more expensive to maintain
- Processes that are restricted to an organisation silo and are therefore not aligned to business need
- Data created by one process that is not shared with other processes. For example, inspection data that is collected for maintenance planning but not made available to network designers
- Changes to working practices not being fully tested for rigour due to incomplete data

And most importantly, IT functions are finding it more expensive and difficult to change their applications to keep up with changing business needs.

Returning to a previous illustration, across the IT challenge a disconnect can clearly be seen between the strategic planning functions and the day-to-day workforce activities. The applications and systems within the engineering and planning functions have been developed in isolation and often in-house. By contrast, workforce management and fieldforce management applications are more mature, and tend to be monolithic, industry-specific packages, but still proprietary and largely isolated from core systems.

THERE NEEDS TO BE A SOLID DATA FOUNDATION, WHERE INFORMATION SITS IN A SINGLE REPOSITORY, EASILY ACCESSIBLE TO THE RIGHT PEOPLE, AT THE RIGHT TIME.

For effective ALM, there needs to be a constant two-way ‘feedback loop’. Firstly, data collected in the course of day-to-day maintenance activity needs to be fed into the strategic planning and engineering functions from existing workforce management applications. Secondly, strategic planning decisions and policies need to then feed into and align the workforce systems. Simply put, a holistic organisation where strategy is aligned with delivery and operations.

The last core component here is that for this to happen, there needs to be a solid data foundation, where information sits in a single repository, easily accessible to the right people, at the right time.

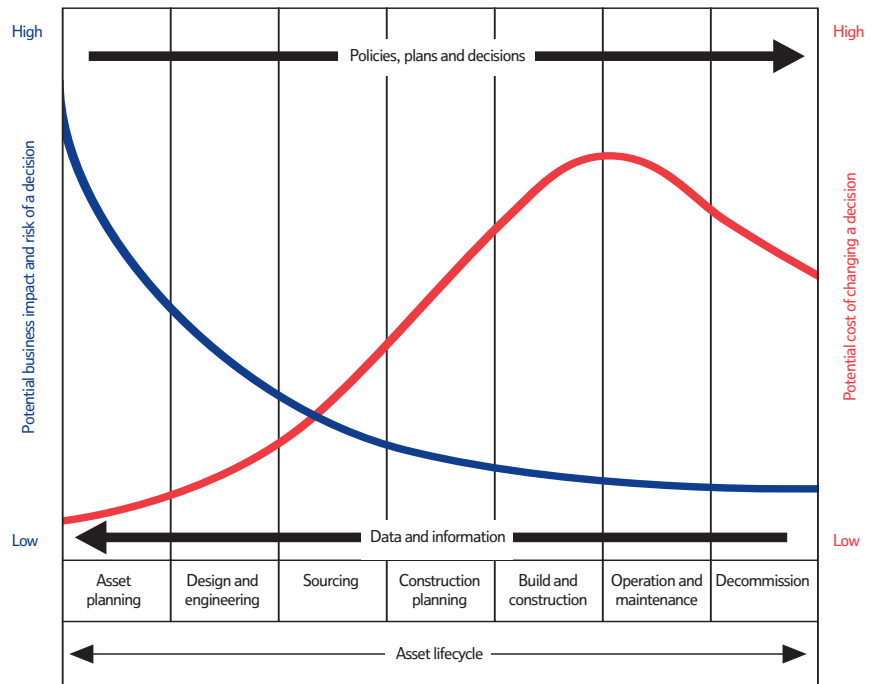


Fig 4: Linking workforce management with strategic planning

While asset data and information management is increasingly recognised as a critical capability for asset-centric companies, for many it remains a weakness because of the inability to retrieve consistent enterprise-wide asset information ‘from the sensor to the board room’. To imagine that strategic business problems can be solved with packaged software alone is like believing that a strange illness can be cured by taking someone else’s medicine – it rarely works.

COMPLEX SUPPLY AND VALUE CHAINS IN TRANSPORT AND UTILITIES

One of the critical challenges that must be overcome in any ALM approach is the understanding of complex inter-dependencies. Take the retail industry for example, interdependent relationships are critical in retail: margins are tight and managing the supply chain efficiently is essential to profitability. In transport, these interdependencies add another challenge: shared responsibilities. When service failures occur, someone in the value/supply chain has to take the blame, and in the case of Network Rail and the Train Operating Companies (TOCs), the financial penalty.

Many of these value chains share assets, infrastructure and processes. Moreover, there are numerous instances where they should share data, infrastructure and processes: delivering efficiencies across a number of heavily related organisations. It's important to see these as integrated sets of networks, which impacts on the nature of what makes a successful ALM architecture.

ARGUABLY NOW IS THE BEST TIME TO BE SERIOUSLY ENGAGING IN ALM SOLUTION PLANNING.

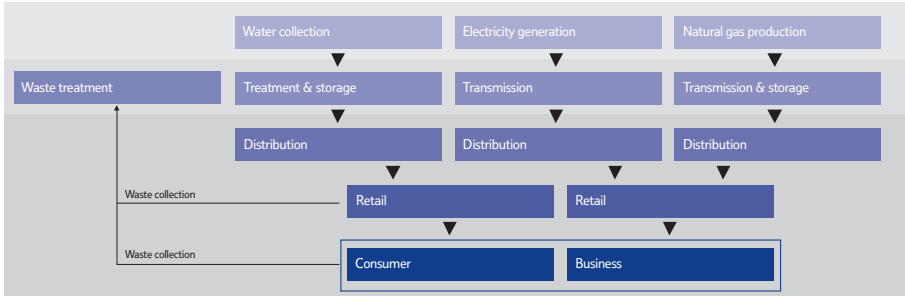


Fig 5: The utilities value chain

What is needed is a new approach, rather than a standalone solution. This approach needs to be founded on solid process experience, on an open architecture, and on industry-standard components. It needs to be sufficiently low-risk and modular to avoid a 'boil the ocean' approach, but capable of scaling to manage vast, complex asset networks.

WHERE IS ALM TODAY?

Asset lifecycle management as a concept has long been touted by vendors. However Gartner's hype curve, which charts the path of technology take-up through various stages from initial promise to widespread adoption, shows it is only very recently moving on from 'the trough of disillusionment'. Why is this? Previous iterations of ALM have been developed by niche vendors, and not thought through from a wider perspective. These initiatives did not consider the wider IT infrastructure typically employed by transport or utilities organisations, and rarely realised the complexities involved in the supply/value chains inherent in these organisations (such as PFI relationships, shared ownership structures and the symbiotic relationships across generation, distribution, manufacturing and service parts of organisations).

Now, the situation is different. Arguably now is the best time to be seriously engaging in ALM solution planning. The technology has matured significantly, particularly around Service Oriented Architectures (SOA) and Shared Service thinking. From a supply side, vendors have consolidated and entrants of mainstream 'industry standard' players (such as BT and Oracle) make an ALM engagement more attractive, less costly and lower risk.

THE NEXT SECTION LOOKS AT BT AND ORACLE'S RESPONSE.

3.0

The BT and Oracle solution

BT and Oracle have combined forces in a response to the asset time-bomb that enables clients to adopt a proactive Asset Lifecycle Management (ALM) approach. The BT and Oracle ALM solution unifies Oracle's leading technologies – its enterprise-grade Oracle 10g database platform, and its Oracle e-business applications suite – with BT's business transformation, programme management and service expertise.

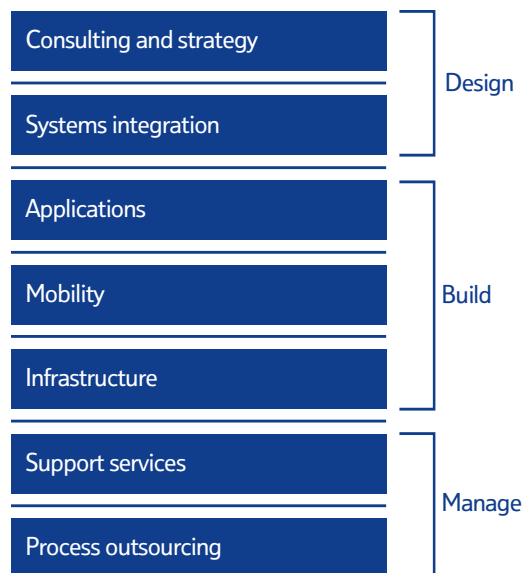


Fig 6: ALM: Design, build and manage

ALM is a series of systems, processes and associated technologies designed to provide a comprehensive, flexible and dynamic capability for managing a company's assets from planning to decommissioning. Specialists work with clients to identify their specific key business issues, and define a route map that focuses on realising benefits as swiftly as possible. ALM provides the consistent view of assets needed for effective management across the asset lifecycle.

ALM addresses the challenges of asset management through:

- Modular application architectures that enable selection of software components from an extensive suite of pre-integrated components
- The use of standard data and process models to ensure consistency between all application components and their interfaces
- A consistent data model for accurate, timely and complete information
- An incremental approach to implementation and legacy system replacement rather than a big bang approach
- Intelligent middleware tools that eliminate integration and data sharing problems and reduce development effort

- Removal of application silos, each having unique sets of databases, functions and processes
- Application evolution methods to enable maximum value to be driven out of legacy applications and to minimise the transition costs of new application components
- Emphasis on the re-use of functionality and data within a service oriented architecture that helps reduce the amount of time required to develop and change applications
- A more flexible and agile design that allows organisations to become more informed and responsible when dealing with customers and changes in regulatory requirements

“DATA QUALITY (E.G. CLEANSING, STANDARDIZATION, IDENTIFICATION/MATCHING, INTERDICTION) WILL EMERGE FROM A DISQUIETING ENTERPRISE EMBARRASSMENT TO A REQUISITE CORE IT COMPETENCY AND BUDGET ITEM.”

Meta Group, 2003

THE ALM APPROACH: THE COMPONENTS

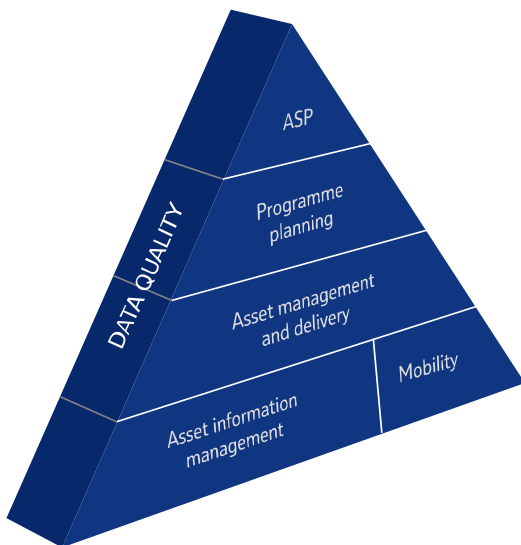


Fig 7: The components of the BT/Oracle solution

Asset Strategy Planning

Historically, a significant barrier to asset holders has been the inability to accurately predict the impact of strategic planning decisions on their operations, revenues and service delivery. BT's ASP tool allows organisations to quickly test varying 'what if' scenarios and develop the optimum asset management policies for the organisation.

Asset investment and programme management

BT and Oracle's approach develops the asset investment programme planning function, unifying frequently disparate and discrete programmes into a holistic strategy. This is only possible by implementing common processes throughout the asset management discipline, with an underlying Oracle foundation of data.

Asset management and delivery

From asset investment planning, the ALM focus moves onto ensuring strategic planning decisions are implemented in the most consistent and efficient manner possible. This results in significantly increased workforce utilisation rates and drastically reduced costs.

“BUSINESSES THAT USE A FORMAL, ENTERPRISE-WIDE STRATEGY FOR GLOBAL DATA SYNCHRONIZATION WILL REALIZE 30% LOWER IT COSTS IN INTEGRATION AND DATA RECONCILIATION AT THE DEPARTMENTAL LEVEL THROUGH THE RATIONALIZATION OF TRADITIONALLY SEPARATE AND DISTINCT IT PROJECTS”.

Gartner Group, August 2004

Asset information management

Once a foundation of quality data is established, BT and Oracle’s ALM approach allows organisations to feed this information to the right decision-makers, at the right time. Ongoing management of asset information is critical, and the ALM approach ensures that critical data from the field force responsible for maintaining assets is captured and made accessible to the right people at the right time.

Mobility

With any dispersed asset base, organisations tend to rely heavily on an equally dispersed field force. Mobility frequently forms a critical component of an ALM approach, both from the mobile enablement of the field force (such as mobile data capture/process and dynamic scheduling) and even mobile connectivity embedded into the assets themselves.

SERVICE-ORIENTED ARCHITECTURES

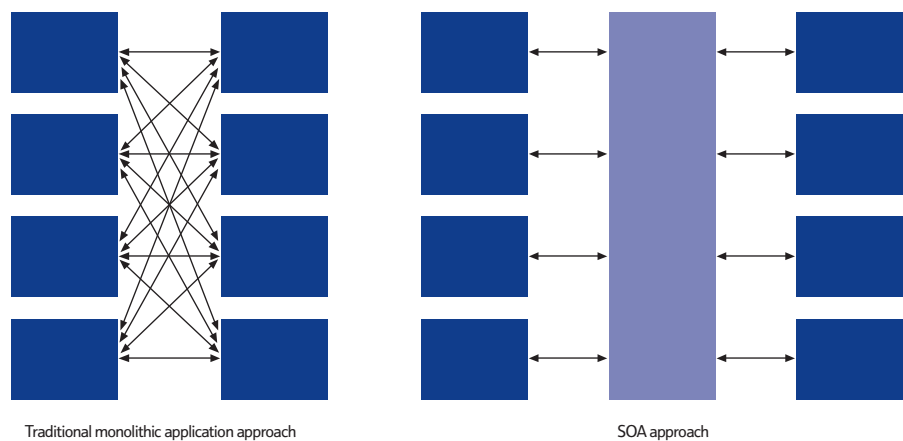


Fig 8: From point-to-point to shared service

A Service Oriented Architecture (SOA) is simply a way of thinking about a business that views consumers and producers of resources as independent services that are accessed in standardised ways. This results in a flexible, loose coupling between the various parts of a business – allowing internal and external participants to interact according to agreed service levels while at the same time allowing the whole business to evolve when conditions dictate that it must. Indeed, it is the inflexibility of old-fashioned all-encompassing packaged applications that is a major contributor to the aforementioned IT capability gap.

COMMON DATA AND PROCESS MODELS

A further feature of the BT/Oracle SOA is its use of industry-standard data and process models. The model used for electricity utilities is The Common Information Model (CIM), developed by the IEC Working Group 14, of which BT is an active member. This model provides common definitions for all the data sets and processes used. Not only does this create the model to manage integration of the applications in the ALM solution, but also provides the reference point by which any new application or process can be tested.

An interesting further benefit of the CIM has been to help utilities integrate their applications after a merger or acquisition, and ensure consistent management reporting across the combined organisation.

The foundations of enabling effective asset lifecycle management are the data and processes on which the organisation plans, deploys and maintains its asset base. This is no small undertaking, and Oracle’s database heritage is critical to this part of the ALM approach: unifying and consolidating data sources, bringing data into a common format and ensuring all data is accurate, relevant and up-to-date.

The two approaches can be contrasted by considering how applications interact. In the old-fashioned approach, critical interfaces between applications have to be hand-crafted on a case by case basis – resulting in a brittle architecture difficult to evolve and change.

With an SOA, such as is employed in Oracle’s e-Business Suite, intelligent middleware provides a standardisation and co-ordination layer, minimising direct application-to-application coupling, and yielding a more resilient and adaptable model. As an enterprise infrastructure grows, using an SOA reduces the number of potential application inter-connections from many-to-many to many-to-one, resulting in lower cost of ownership, greater flexibility to support change, better access to information and improved data quality.

ALM ALLOWS COMPANIES TO MANAGE THEIR REGULATORY RESPONSIBILITIES AND GOVERNANCE BETTER BY PROVIDING STREAMLINED OPERATIONS, TRANSPARENCY IN THE MANAGEMENT OF ACQUISITIONS AND IMPROVED ACCURACY IN REPORTING.

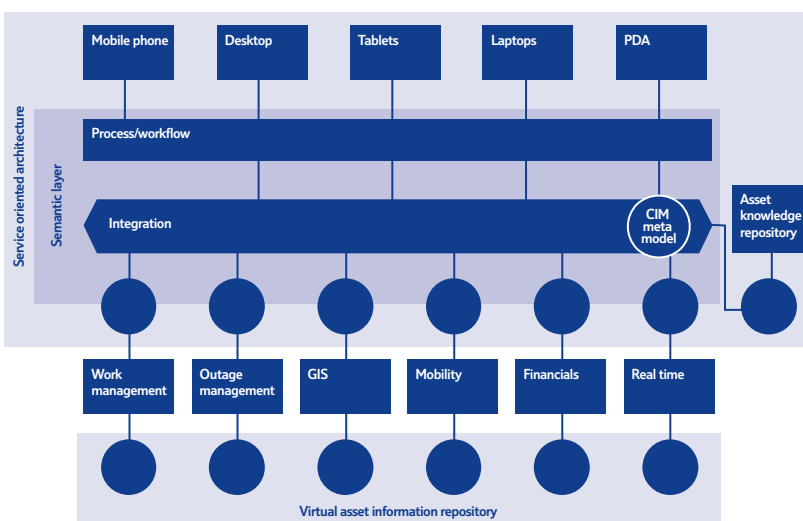


Fig 9: The ALM architecture

ONCE AN SOA IS DESIGNED, IMPLEMENTED AND PROVEN, IT CAN ENDURE THROUGH MANY GENERATIONS OF REGULATORY REVIEW, NEW TECHNOLOGY AND CHANGING MARKET CONDITIONS.

SUMMARY: ORACLE AND BT'S PARTNERSHIP OFFERS CUSTOMERS:

- A reliable, high performing information technology backbone
- A flexible solution which can be implemented quickly, with fewer integration headaches and complexity than competitive offerings
- A low risk evolutionary approach that is aligned with business imperatives and can be simply realigned as the imperatives change
- A modular solution that allows utilities to gain maximum value from existing IT before evolving to the new solution
- A proven cost-effective solution that will deliver the expected benefits in minimum timescales
- Expertise around business transformation and service delivery
- Utilities-specific heritage
- A complementary partnership, with no 'overlapping' remits, and philosophy of shared risk

4.0

Benefits of the BT/Oracle ALM Solution

ALM is a broad area, and the benefits listed in this section are 'enterprise-wide'. With that, read 'frequently hard to measure and quantify'. Gartner's frequently mentioned analysis of "70% of IT projects failed to deliver their promised benefits" is pertinent here.

AN ALM ARCHITECTURE ENCOURAGES THE INTEGRATION OF REAL-TIME DATA SOURCES WHICH PROVIDE THIS COMPREHENSIVE LIFETIME PICTURE.

However, BT and Oracle's experience in ALM has enabled the development of a benefits realisation methodology. At the heart of this approach, is the key principle that all projects within an ALM programme must have a benefit associated with them and this benefit must be quantifiable.

The benefits of ALM extend throughout a company's complete value chain, as asset considerations begin with strategic planning and continue through to decommissioning. Typical benefits include:

INCREASED ROCE

By integrating the state of in-field assets with the work planning and asset planning functions, ALM helps to extend the life of assets, resulting in significant aggregate improvements in ROCE. In addition, ALM can help companies to be better prepared for the challenges they will be presented with to increase productivity as their workforces grow older.

REDUCED COSTS

An ALM architecture is a flexible architecture in which all parts of a business communicate using standardised channels. This eliminates the costly work of crafting bespoke interfaces between incompatible systems, and the even more costly work of re-entering data multiple times because of such incompatibilities.

ABILITY TO COPE WITH COSTS AND CONSEQUENCES OF DEPRECIATION

Because depreciation causes businesses to engage in difficult investment decisions, ALM helps them cope with its costs and consequences by providing new options, such as the ability to institute condition-based maintenance policies, real-time status monitoring and more informed investment decision making.

INCREASED REVENUE AND HIGHER LEVELS OF CUSTOMER SERVICE

ALM facilitates improvements in supply chain management, inventory management and customer care, resulting in higher levels of customer service and increased revenue.

COMPREHENSIVE AUDIT TRAILS

To comply with increasing regulatory requirements across increasingly global markets, utilities must thoroughly document and maintain records concerning the full lifecycles of their deployed capital assets. An ALM architecture encourages the integration of real-time data sources which provide this comprehensive lifetime picture.

REGULATORY COMPLIANCE

Company scrutiny and the examination of corporate practice have never been more exacting. The impact of major multinational bankruptcies in the US such as Enron has created direct repercussions in the UK and EU regulatory environments. Regulatory structures for corporate accountability, financial reporting, and the role of non-executive directors are constantly changing. ALM allows companies to manage their regulatory responsibilities and governance better by providing streamlined operations, transparency in the management of acquisitions and improved accuracy in reporting.

BUSINESS AGILITY AND THE ABILITY TO COMPETE BETTER

ALM results in a transformation process that makes businesses more nimble and flexible, allowing them to change swiftly as market conditions move. They become horizontally co-ordinated, gaining the agility to respond to demand fluctuations in real-time.

REDUCED RISK

The daily decisions that managers and engineers make about managing assets – whether to replace them or retain them – is an enormous issue. The consequences of poor decision making can be disastrous. ALM provides managers, planners and engineers with global business visibility across the enterprise, enabling them to make more informed and better decisions, resulting in more effective risk management. ALM also improves the understanding of all cost-based activities and fosters an improved ability to model future outcomes based on market choices.

CONCLUSION: MEASURING THE BENEFITS

BT and Oracle recognised that there is little value in introducing technology just because it exists. There has to be a business reason for doing it: so BT and Oracle's initial engagements in ALM focus on benefits realisation. This means exploring the post ALM scenario: and identifying and quantifying the benefits an organisation can expect.

5.0 BT and Oracle credentials

THE PARTNERSHIP

The BT and Oracle partnership offers the perfect mix. Oracle offers an industry-leading relational database platform (Oracle 10g), middleware and its own application suite (Oracle e-business). Add this to BT's consultancy, process transformation and service expertise and you have a powerful combination.

In addition to its transformational consulting expertise, BT has first-hand experience of full-lifecycle stewardship of the largest capital networks in existence. In the UK alone, BT's network comprises over 60 million network assets and ALM techniques provide BT with the infrastructure to support operations as an asset-centric utility.

For BT, like many companies confronted with major asset lifecycle management challenges, simply tearing apart its infrastructure was not an option – it needed to leverage existing IT investments, enable its divisions to respond faster to the needs of the future and provide a graceful means to retire legacy applications as needed.

HOW DO BT AND ORACLE WORK TOGETHER?

The BT and Oracle partnership is based on a complementary fit of skillsets and expertise.

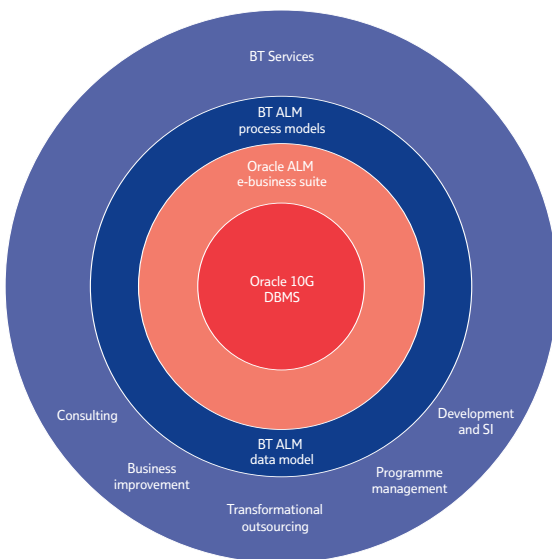


Fig 10: A complementary partnership

IN DATABASES AND APPLICATIONS – ORACLE

For nearly three decades, Oracle, the world's largest enterprise software company, has provided the software and services that let organisations get the most up-to-date and accurate information from their business systems. Today, Oracle is helping more governments and businesses around the world become information-driven than any other company.

Oracle Database 10g Enterprise Edition is the latest version of its renowned database platform and is ideal for enterprises that need to support high volume on-line transaction processing and query intensive data warehousing applications, as is usually the case in asset-centric organisations. It provides proven scalability on all hardware configurations, and can be used to manage very large amounts of information, with the highest level of security assurance in the industry. Oracle Database 10g Enterprise Edition provides unique availability benefits that protect data from costly human error, reduce the downtime associated with routine maintenance, and includes self-managing capabilities to help lower operational costs. As the first database designed for Grid Computing, Oracle Database 10g Enterprise Edition can be used to significantly reduce infrastructure costs, through the efficient use of shared pools of low cost, standardised hardware components.

Oracle e-Business Suite is a fully integrated, comprehensive suite of business applications for the enterprise. Whether you implement one module at a time, multiple modules or the complete suite — Oracle e-Business Suite provides better business information for effective decision-making and its native flexibility enables you to adapt your enterprise as your markets change.

Oracle e-Business Suite families include:

Advanced Procurement	Maintenance
Contracts	Manufacturing
Corporate Performance Management	Marketing
Customer Data Management	Order Management
Customer Relationship Management	Product Lifecycle Management
Financials	Projects
Human Resources Management	Sales
Intelligence	Service
Interaction Center	Supply Chain Execution
Learning Management	Supply Chain Management
Logistics	Supply Chain Planning

IN CONSULTING AND SERVICES – BT

BT knows that for any new ICT programme to deliver benefit the technology and application elements need to be supported by a set of other activities. These include:

- Programme Management
- Process Improvement
- Data Transition
- Skills and Culture Improvement
- Benefits Realisation
- Risk Management
- Systems Integration
- Transition Planning
- Testing
- Commercial Architecture

These are areas where BT has developed world-class capabilities and for utilities a relevant consideration is that BT is a utility itself and, through the PIPeR project (see right) is experienced in building ALM applications to manage the UK's largest network: its own.

BT'S PIPeR PROJECT: THE SCOPE

PIPeR encompassed a huge scope, facilitating an architecture that supports:

- Changing the way thousands of people do their jobs
- Transforming data into an intelligent format for 60,000,000 network assets, 74,000,000 communications channels and 400,000 optical fibres
- The use of many new data sources
- The development of new data transformation tools
- Dealing with a recording backlog
- The implementation of major new enterprise systems with specific functionality for planners
- The implementation of many new business processes
- The management of a major programme with 300 people onshore, 2500 people offshore (India and US) and 18 major suppliers
- Full integration with other programmes

6.0 How to get started

Asset lifecycle management is a broad area, touching all points of an organisation. It is understandably a daunting task to address, and a comment often heard is ‘where do I start?’

In recognition of this challenge, BT and Oracle have developed an engagement model to help organisations address ALM in a best practice way, without high risk early commitments or extensive upfront investment. The ALM engagement process takes organisations from initial investigation and discovery, through to implementation. The process also takes into account that every organisation will be at a different stage in this journey and have different priorities.

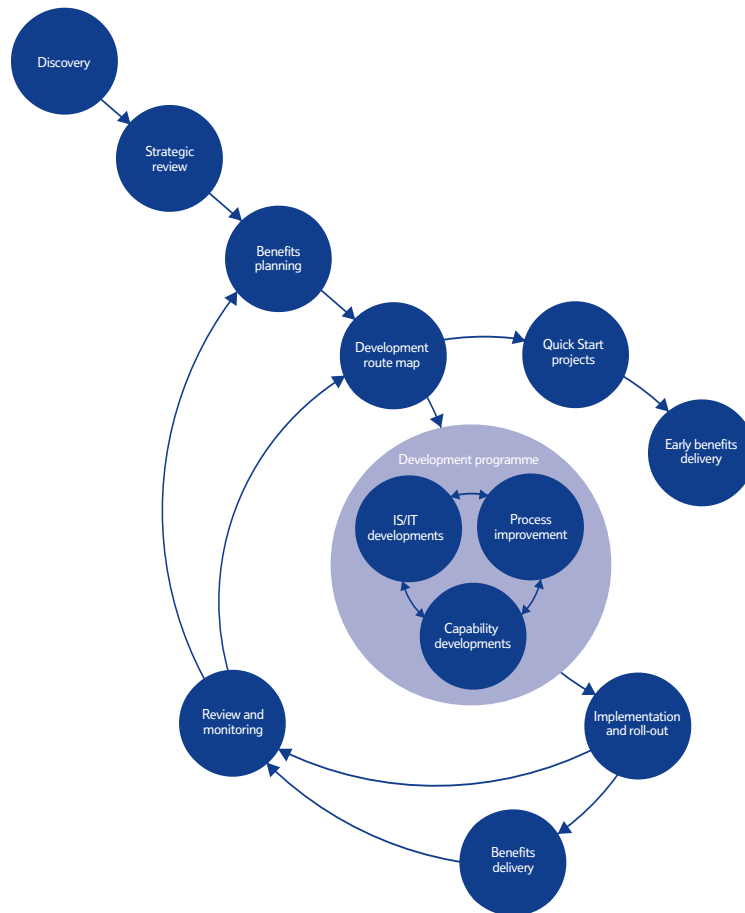


Fig 11: The ALM engagement process

The most important part of any journey is the first step. For BT and Oracle, this is to discover with the client what the real issues and priorities are. This is particularly relevant to utilities and transport organisations because they all have existing systems and processes, most of which are still performing some useful functions. The BT/Oracle approach is to identify where the problems lie, what the priorities are, and then develop a plan to address the problems. Another key element is recognition that there are often opportunities to do small things quickly and so deliver early improvements. BT/Oracle offers a number of concise service engagements designed to release these quick benefits: the Quick Start services.

BT/ORACLE QUICK START SERVICES

To help address this, BT and Oracle have developed a number of concise, packaged service-led engagements to deliver ‘quick wins’ within asset lifecycle management.

Typically, a Quick Start has four stages, where BT and Oracle help an organisation define or outline an approach to solving a particular problem related to ALM. These deliver immediate value, whilst providing a longer-term direction for improving asset management.

TYPICAL QUICK START STAGES	
1. DISCOVERY SERVICE	2 WEEKS
2. SOLUTION PLANNING	2 WEEKS TO 1 MONTH
3. SOLUTION DEVELOPMENT AND ROLL-OUT	2-3 MONTHS
4. BENEFITS DELIVERY	ONGOING



Fig 12: The BT/Oracle Quick Start services

Summary

BT AND ORACLE HAVE JOINED FORCES TO CREATE A COMPELLING RESPONSE TO THE ASSET TIME-BOMB WHICH ENABLES ORGANISATIONS TO IMPLEMENT ALM PROCESSES THROUGHOUT THE ENTERPRISE.

The asset time-bomb is real and could go off at any moment. BT and Oracle have joined forces to create a compelling response to the asset time-bomb which enables organisations to implement ALM processes throughout the enterprise. Oracle has delivered many generations of best-of-breed technology and applications to the industry while BT has extensive experience across a range of ALM projects within the utilities and transportation sectors, and can expertly deliver the ICT component of an ALM programme on time, within budget and at low risk.

Both organisations have been around, and healthy, for decades. Together, they are committed to helping their clients move ahead smoothly and without disruption. Now is the time for action.

Glossary

ALM

Asset Lifecycle Management

ASP

Asset Strategy Planning

CIM

Common Information Model

DBMS

Database Management System

GIS

Geographic Information System

ICT

Information and Communications Technology

IS

Information System

PDA

Personal Digital Assistant

ROCE

Return on Capital Employed

SI

Systems Integration

SOA

Service Orientated Architecture

TOCS

Train Operating Companies

Why BT?

BT advises on, creates and manages IT and communications systems. With expertise in the development and implementation of large scale business systems, BT develops innovative ideas for its clients using the latest technology. It helps organisations embrace change and new developments, enabling them to grow, break into new markets and grasp business opportunities.

What next?

We can take you through the benefits and implications that would directly affect your organisation, as well as help to build tangible examples that are more valuable to your business stakeholders.

To arrange a meeting to discuss BT's ALM approach in more detail, contact your BT Account Manager or call us on 0800 389 4848.



Offices worldwide

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