TRANSFORMING LOCAL GOVERNMENT ICT

Building the infrastructure that will enable cloud computing
THE IMPORTANCE OF STRONG FOUNDATIONS
All successful building and development initiatives share a common principle—preparation and assessment strategies must be developed before the journey begins.

The construction of a home or office building begins, in a physical sense, with the foundation. The depth and breadth of this foundation dictates how the structure on top can be built, and how it can be changed during the construction phase and in the future.

In our homes today, a single incoming telephone line might be connected to a router, a satellite television box, entertainment devices, personal computers, and the telephone itself. We don’t need to understand how each device is recognised by the infrastructure that lies behind it. The system just works.

Governments around the world are pushing for greater connectivity, better online services, and greater flexibility and cost effectiveness in the delivery of information and communication technology (ICT). Cloud computing is touted as a potential solution and will—without doubt—have a strong impact.

However, before we move to this next wave of computing, we must consider the infrastructure that is required to take full advantage of this transformation and ensure that we do not start something that we cannot finish.

After a succession of integration projects and new service deployments, the foundations of ICT in the public sector must be reinforced and updated. Stronger foundations will free up cash, enabling councils to make the step toward cloud computing. This renewed period of investment, innovation, and redesign will make “Digital by Default” a true possibility and release resources to focus on “digital take-up” of the consumers of local government services.

THE CURRENT ENVIRONMENT– BUILDING WITH LIMITED RESOURCES
According to Forrester Research, 80 percent of public sector ICT budgets is allocated to “keeping the lights on,” while leaving only 20 percent for innovation and new services. Furthermore, the continuation of present practices will further erode innovation budgets.

In the UK, public sector ICT budgets are being cut by 30 percent in the short term. This will equate to 40+ percent over a longer period. At the same time, the demand for “Digital by Default” services grows.

The public sector supports investments in solutions that better serve social and family services. These services are becoming ever more important as unemployment remains high and welfare payments remain stagnant. Town halls across the UK are announcing severe job redundancies, and the threat of a downgrade in front-line services remains ever present.

The ICT industry has been outspoken about the need for cloud computing and how this new computing architecture and deployment model will save 20-50 percent of ICT budgets. However, the industry has not always been able to clearly articulate how cloud computing will drive substantial savings in ICT and business operations.

According to some, suppliers will have to change their go-to-market models. Technology will be “outsourced” to new cloud environments and costs will be transparent as services are delivered immediately across supplier clouds. As a result, the public sector will be able to take immediate advantage of the falling price of services—as and when they happen. Is this true?

Let’s go back to the infrastructure issue. If your family decides that adding another level to the house and building an extension will solve your space problems, do you just order a pallet of bricks and get started?

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In the same way, the approach to ICT infrastructure must include a long-term view. A transformation of ICT infrastructure is absolutely necessary to move to the cloud model and take advantage of the associated benefits.

**DESIGNING THE PLANS FOR ICT INFRASTRUCTURE TRANSFORMATION**

Several factors have converged to bring about the transformation taking place in ICT:

• Communication speeds permit faster connectivity over longer distances
• Applications and business services are only using about 10 percent of the available capacity of server farms
• Data can be stored and retrieved in vast quantities, across wide areas
• Virtualisation is a mature technology that can be scaled throughout the enterprise
• Data volumes continue to grow exponentially, and a new approach to managing this growth is necessary

But even more than any of the above forces, this equation summarizes the challenge:

We must recognise that the existing infrastructure is not fit for purpose.

According to Kable, when commenting on local government trends in the UK:

“The forecast period (2010-2015) is likely to include a radical overhaul of local authorities’ infrastructure, with the data centre becoming the focal point of attention. Local authorities will not just refresh their servers, but also invest in virtualisation technologies in order to cope with surges in demand and introduce greater flexibility into their networks.”

The society of IT managers (SOCITM) in the UK public sector confirm that:

“Local public service organisations should join-up service delivery strategies and support them with collaboratively developed, ICT enabled, delivery processes and communications functions. They should jointly commission ICT and other infrastructure and services, pool budgets, share staff, and measure, capture and share benefits and savings.”

To maximise the value of taxpayer money, infrastructure must change, data centres must be brought into the fully virtualised world, and there must be far greater emphasis on sharing the otherwise under-utilised resources. Behind this lies the need to save, not just for savings sake, but in order to free up budget for the move to greater online capability.

According to Forrester, only 6 percent of global CIOs have made the move to the cloud. Therefore, although the cloud vocabulary has been present for some time, for approximately 94 percent, the journey is not yet complete.

Gartner also supports this data:

“CIOs expect to adopt new cloud services much faster than originally expected. Currently, 3 percent of CIOs have the majority of IT running in the cloud or on SaaS technologies, but over the next four years CIOs expect this number to increase to 43 percent.”

Virtualisation is not cloud computing, but a component of it. The journey to the cloud begins with virtualisation on a number of levels and across several technologies.

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1 “Opportunities in Austerity,” Kable, August 2010.
2 “Planting the Flag,” SOCITM, June 2011.
3 CTO Power Panel, Cloud Expo, New York, 7 June 2011.
4 “Gartner Executive Programs Worldwide Survey of More Than 2,000 CIOs Identifies Cloud Computing as Top Technology Priority for CIOs in 2011,” January 2011.
Transformation therefore requires a complete overhaul of ICT infrastructure that enables immediate cost savings and delivers a foundation for cloud computing in the future. It is about driving substantial efficiency in the way present systems are supported and how new business initiatives are funded. Budget pressures dictate that the transformation must be fast moving—whilst disrupting the business as little as possible and enabling the delivery of shared services between councils.

**THE HOLD UP IN THE BUILDING PROCESS**

Over at least three decades, ICT infrastructure has been focused on decentralisation.

The original mainframe capability, delivering service to the public sector in areas such as welfare and taxation, focused on providing automation for workplace processes. As technology advanced it became possible to deliver still greater automation—tailored to local processes and approaches—by decentralising more customised operations and, at least in theory, adding value to overall workflow automation.

As new laws and policies were introduced, they became easier to implement across a decentralised environment. However, with all of this, complexity was being built into the system.

Successive ICT projects across government sought to introduce new services and new levels of automation, whilst always accommodating the existing legacy estate. As a result, projects were being budgeted on the 80/20 rule: 80 percent of funds was being invested to integrate new services with existing outdated services and 20 percent was invested in the new services themselves.

The drive for continued decentralisation and the desire for more elaborate application capabilities (such as online services) have, through the resulting complexity, consumed entire ICT budgets. There is a surely profound need to simplify the underlying infrastructure—yet, we may ask, why has it not already happened?

**RISK**

Our welfare and other citizen services legislation has changed many times over four decades. Reluctance to address the underlying infrastructure of the systems supporting these services has increased the complexity, and discarding the systems entirely carries enormous risk. Several UK Government departments have been trying to break this cycle over the years, with limited success.

However, transformation must proceed. New legislation, such as the UK Welfare Reform Bill, has become a catalyst. When combined with the mandate to reduce the cost of ICT in the public sector, the pressure to transform operations is extraordinary. This comes just as our world of technology appears to be moving from decentralised resources to centralised resources for mission-critical and core business process automation.

In truth, it would appear that the public sector has a chequered history of implementing new systems. Often, the continued use of legacy resources, whilst seen as the least preferable approach, has been the lower risk option. This approach is also the more expensive, less flexible, and more complex option, which continues to accrue costs well into the future.

Transformation is essential and it must happen now. The risks of continued overspending in ICT from the public purse are more significant than ever.

**BUSINESS CHANGE**

Perhaps the most challenging aspect of this ICT transformation is the degree of business change required to take full advantage of technology. These are not easy transitions. The training implications for thousands of employees affect both cost and productivity in the short term. Nevertheless, decades of incremental changes in policy and legislation have not been reflected in working practice. Whatever the short term implications may be, extra work and commitment to business process change is essential to reap the benefits of ICT transformation.
The SOCITM concurs:

“Specific, organisational change management capability is required to implement new ICT-enabled, service-led operating models that cross traditional organisation boundaries and are focused on the needs of service users and their communities.”

In addition, PA Consulting makes the following point in their paper, “ICT in a Post-Spending Review World:”

“The effective deployment of ICT can help local authorities to transform their offering and release cashable savings, however, it is important to recognise that this cannot happen through technology alone. It is imperative that councils recognise that ICT is an enabler and for sustainable change to be embedded, ways of working and business process redesign must be addressed.”

Some councils grasped this some time ago and as a result have implemented common standard business processes across generic functions such as financial accounting, payroll, and human resources management. This trend can be applied across single council or education establishments or expanded to include all unitary and district councils within a given territory. The result can be significant savings in technology costs, as well as in business administration.

As an example of the other side of this equation, in several UK counties alone, there are more than eight implementations of a financial accounting package and six implementations of a customer relationship management (CRM) solution. This is unsustainable and represents a misuse of taxpayer funds. It is in local authorities like this one that business change must accelerate without delay.

The PA Consulting paper makes this quite clear:

“The commercial role of the CIO is key, yet many local authorities fail to recognise this. Blending the commercial expertise with business acumen is essential if CIOs are to support their organisations in driving out a measurable return on investment.”

Moreover, the councils that have made progress toward common practice and common generic systems are also those where the CIO-to-Board relationship is harmonized and valued.

The fear of risk and the challenge of operational change are hindering the transformation process. However, to delay longer will prolong the pain, increase the eventual cost, and negatively affect frontline services. Quite simply, budgets are not available even to “keep the lights on” in existing infrastructures. Business change is essential and should be coordinated with ICT efficiencies. ICT must transform to deliver immediate savings and enable a move to cloud computing. Only then can we guarantee ongoing efficiencies with benefits to be realised in the medium and long term.

MOVING FORWARD WITH BUILDING PLANS

In the beginning of this document, we compared the ICT transformation to the same considerations required to build a house. Similarly, the cloud does indeed require the foundations of IT resources and services to be transformed. This transformation will enable local authorities to deliver on the expectation of “doing more with less,” and enable the re-engineering processes necessary to deliver required cost savings.
By focusing on the building blocks of the cloud that exist within the typical local authority, we see the benefits of transformational rather than tactical thinking. These benefits include:

- **Data centres** can reduce space, heat, power, and lighting requirements by up to 60 percent.
- **Physical infrastructure** can be transformed by replacing the old model of server, compute, and storage with a unified infrastructure.
- **People, process, and automation** can be rationalized and made more effective.
- **Levels of application and server virtualization** can now reach up to 80 percent in most environments—creating a local authority cloud.
- **Virtual resources and automation** mean that local authority services can be federated and shared more effectively than has been historically possible.
- **Overall ongoing cost savings** of between 30-60 percent can be achieved with payback in a year.
- **Service levels, innovation, agility, and resilience** can be dramatically improved.

With all of the above in mind, a coordinated approach that follows these steps will be the most effective way to achieve the benefits of transformation:

1. **CONDUCT AN OPPORTUNITY ASSESSMENT**
   - Take a few weeks to understand and promote the benefits that can be achieved.
   - Focus on the data center, the infrastructure, and the level of virtualization—from server, through application, to desktop and device.
   - Articulate the pain points of your current infrastructure and operations.
   - Create a board-level paper to facilitate engagement at the most senior levels of the organization.
   - Get stakeholder involvement and buy-in early in the process.
   - Start by turning “tactical ICT” into a strategic enabler.
   - Make the cloud real, not theoretical.

2. **OUTLINE THE BUSINESS CASE**
   - Get into the details by understanding the numbers: servers, people, other costs (heat, light, power, and space), contract expirations, refresh strategies, organizational charts, pay and non-pay costs, capital and operating budgets, and the organizational strategy.
   - Use the numbers to create a maturity model, develop a financial statement, identify possible options, and deliver a transformational roadmap. Use simple terms to indicate what needs to happen and when to deliver the cloud, the savings, and the transformation in service.
   - Present a service request order (SRO) to the Board within four to eight weeks.

3. **COMPLETE THE BUSINESS CASE**
   - Take a few months to sharpen the details of the business case outline.
   - Run capacity planners.
   - Analyse what individuals do now and the roles required in the future within a cloud-based IT function.
   - Clarify real costs.
   - Identify the risks and how to deal with them.
   - Generate a detailed plan.
   - Describe the effects the changes will have on people, organization, process, technology, and culture.
   - Confirm the benefits and commit to the project.
   - Get Board approval to move forward on the promise, and mobilize the delivery team.
THE SOLID FOUNDATION FOR A CLOUD-ENABLED FUTURE

Public sector ICT infrastructure holds the key to enabling cloud computing and delivering its benefits in the years ahead. However, it’s important to understand and execute a plan that completes the transformation of this infrastructure before any cloud project is undertaken.

Considerable savings can be achieved by re-investing in the foundations of ICT services. The exercise will enable the efficient delivery of shared services and put the public sector on the road to the cloud. The project timetable need not be more than 12–18 months, and experience shows the return of investment can be achieved within the same period.

Infrastructure modernisation holds the key to saving up to 60 percent of operational ICT costs today. Cloud computing will deliver a long-term contribution, ensuring that lower cost ICT services can be delivered and supported well into the future.

Project success depends on several factors. Costs and dependencies must be transparent. Objectives and timeframes for accomplishing them must be evaluated pragmatically. A solid and well-understood business case and plan, which can be broken down into stages, must deliver tangible benefits at each stage.

Cloud computing will deliver multiple benefits to both ICT and the business at the local government level. However, to complete the journey to the cloud, we must focus on transforming the infrastructure that serves as the foundation for cloud computing.

ABOUT EMC

EMC Corporation is a global leader in enabling businesses and service providers to transform their operations and deliver IT as a service. Fundamental to this transformation is cloud computing. Through innovative products and services, EMC accelerates the journey to cloud computing, helping IT departments to store, manage, protect and analyze their most valuable asset—information—in a more agile, trusted and cost-efficient way.

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