

# LOCAL GOVERNMENT AMALGAMATIONS

## AN ICT PERSPECTIVE<sup>1</sup>

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<sup>1</sup> Note that this is a discussion document and does not imply a formal WALGA position.

## INTRODUCTION

At present, councils have dramatically differing implementations of ICT, from the outdated “support” function of the 1990s, through the “control, contain and comply” function of the 2000s to the strategic enablers of the 2010s. Where ICT is placed in the organisational structure of local governments (LGs) says much about the LG’s view of the function.

It is important for councils to engage with communities, businesses, Government and other stakeholders in a modern, relevant and responsive manner. In many cases, the use of ICT is not only preferred, it is demanded. Web 2.0 features and in particular interaction and complex dynamic data restructuring are serious challenges to traditionally focused Local Governments.

Time of day, day of week and user location are unregulated and the demand for real-time responses to unstructured or highly personalised queries has increased exponentially in the past three years. The ability for ICT groups to step beyond the technology and into the digital and online arena will determine their continued relevance to the organisation.

Outsourcing has been around in viable terms since the 1990s, and gained traction in the 2000s as cost-cutting measures were applied to many organisations. Many bitter lessons learnt through this time have informed a new wave of outsourcing in the 2010’s engagingly called “cloud” technology.

Where this differs from traditional outsourcing is that it allows the high-value skills to remain in-house while outsourcing the low-value effort (such as systems support, upgrades, patches and software development) and the high-cost infrastructure requirements such as storage and servers. However, many bitter lessons are still to be learnt. As with the outsourcing of the 2000s, the “cloud” solutions of this decade require extensive due diligence prior to use and an ongoing management and monitoring function by suitably qualified professionals.

With the amalgamation programme advancing, it is an opportune time to consider radically alternative options for councils in NSW along with traditional solutions. The opportunity to create a highly functional, feature-rich and client-centric ICT landscape suitable for the remainder of this decade (and possibly beyond) is there to be seized.

It will require strong management, appropriate funding and – most importantly – the positive attitude of ICT professionals and their business colleagues. The best solution will not come in a box or from consultancy and vendor bodies. It will come from professional local government managers and staff who grasp the importance and significance of having a sophisticated digital capability and capacity to serve the community.

This document identifies areas that need consideration when planning to amalgamate and includes some comment and recommended actions. It is not a plan in itself and it has no timelines, funding or staffing context. These would be part of an ICT Integration Plan created concurrent with amalgamation taking place.

## BROAD ICT OPTIONS FOR AMALGAMATION/ADJUSTMENT

In all options, *basic* infrastructural systems need to be consolidated or, at the very least, tightly coupled together as early as possible. This is a significant challenge and body of work in its own right. It includes email/calendar systems, telephony, networks and common-use peripheral resources such as printers, security systems etc.

The following broad options relate primarily to major corporate data systems which, although important, are usually not as time critical as basic infrastructural systems. They are, however, the most complex, the most expensive and the highest risk elements in a merger.

### PARALLEL RUNNING

- Keep things going as-is and “harmonise” as time/budget/necessity dictates
- No immediate changes required beyond rebadging
- Risk of failure to change within reasonable timelines is high
- Risk of unfunded change requirements that do not appear until later is high
- Where part-area amalgamations are indicated, this is a problematic solution

### “BIG” SWALLOWS “SMALL”

- Systems with most current investment/value/size expanded to accommodate content from smaller systems.
- At least one stakeholder group still within reasonable comfort zone
- At least one stakeholder will have “business as usual” capability
- Scalability of “big” system needs to be verified
- Doesn’t factor in quality of system and fit-for-purpose

### “SUPERIOR” SWALLOWS “INFERIOR”

- The better system is retained and expanded to accommodate content from inferior system.
- As above, at least one stakeholder “wins”
- This option is *theoretically* better than “big swallows small” but may have practical, operational and budgetary limitations

### INTERNAL REVIEW/RECONSTRUCT

- New entity considered as a whole and a (possibly) new architecture developed by internal stakeholders
- Highest possible quality outcome
- Allows for significant outsource/co-source solutions to be integrated
- Second most expensive short term option
- Risk of undue BaU influence high
- Risk of technical ego and politically motivated choices high
- Risk of narrow scope of ICT skills and alternative product knowledge

### EXTERNAL REVIEW/RECONSTRUCT

- New entity considered as a whole and a (possibly) new architecture developed by external consultants
- Possibly high quality outcome

- External influence may inspire “out of the box” thinking
- Risk of failure due to lack of intimate knowledge is high
- Risk of budget blowout and/or scope creep high if intimate knowledge of current and future operational needs is not held by consultants
- Allows for significant outsource/co-source solutions to be integrated, but...
- Risk of undue vendor influence and potential under or over engineering high
- Risk of disengagement with existing staff is high

## SHARED SERVICE SOLUTIONS

- Most effective solution (in theory) for commodity services such as email, storage, backup, security etc
- Highly problematic (in short term at least) for deeply embedded and complex systems such as Records, GIS, PPRS, Finance, HR
- Needs high level of commitment from centralising authority, both in funding and direction
- Very expensive up-front costs but longer term cost containment (not savings) and effectiveness boost.

## WHAT ABOUT CLOUD?

When determining best options for both basic infrastructural systems and corporate systems, consideration should be given to externally hosted solutions which include the so-called “cloud” offerings. These solutions can be used to either augment or even replace Local Government ICT installations.

It should be stressed that “cloud” solutions have inherent strengths, weaknesses and risks that must be understood. For example, use of “cloud” solutions presupposes a level of internal and external network “bandwidth” and capacity that some councils may find challenging in their current form. There are also location and security-based consideration to take into account.

If considering cloud solutions and providers, refer to the New Zealand Cloud Code of Practice for guidelines<sup>2</sup> to incorporate.




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<sup>2</sup> The Australian Computer Society is currently (2013) drafting an Australian equivalent based largely on the NZ code.

## ICT STRATEGIC PLANNING

At least four separate but inter-dependent plan types must be considered during the reform process. The second and third of our four plans are vital to the smooth transition to a new entity. They are *informed* by the first and help to *inform* the fourth.



### EXISTING PLANS

*Existing entity* plans should exist in some form and can provide useful intelligence (what were they thinking, where were they heading, what has been started, who has been involved, what was budgeted). These could be strategic, operational or both.

Be aware that existing ICT groups, depending on their form and function, may have a narrower focus than expected. Other business unit plans should also be referenced to ensure as full a picture as possible of the existing entities' digital makeup and direction is created. For example, a "Digital Strategy" could easily come from a Marketing, Community Development, Business Development or other area and may have no reference to traditional ICT infrastructure.

### ICT DAY ZERO IMPLEMENTATION PLAN

This plan relates to those matters vital to the operational viability of the new entity on the **very first day** of operation. This plan needs to clearly articulate what is (and isn't) going to happen with ICT assets, systems and communications at the outset. Telephone, email, printing, account names, domain registration, physical and logical security, procurement responsibility (and authorisation channels) and several other issues must be resolved prior to actual integration.

The days and weeks following the corporate amalgamation will see the need for rapid and unexpected change, repair and review of ICT matters. The more that is (a) planned and (b) defined in the overall Plan, the less traumatic this will be.

A key factor in this planning phase is that, unlike the other three plans, there is no actual entity yet in place. Ideally, a technically aware senior manager will have been identified to lead the process during this time. It is equally likely that either no specific manager is given control or that non-technical managers will have responsibility for this phase. In all scenarios, but more so for the latter two, cooperation and commitment from existing ICT staff and vendors will be critical to success.

### ICT INTEGRATION STRATEGIC PLAN

This Plan is likely to have up to a three-year implementation phase. It relates to the actual integration of the more complex data and systems on an ongoing basis. The most challenging will be the primary business systems, specifically Rating, GIS, Finance, HR, Asset Management and Records. These systems are most effective when possessing the full data resources of the entire organisation.

Realistically, most amalgamated organisations will continue to use multiple systems for a time after amalgamation and manually consolidate data for planning and reporting purposes. Once a clear direction is agreed (see broad options above), work with Executive sponsors, ICT professionals,

vendor experts and Subject Matter Experts can take place to build or expand “final” systems and to migrate configurations and then data to a consolidated system. It is important to note here that all four stakeholder groups must be fully engaged during this process.

## ICT (OR DIGITAL) STRATEGIC PLAN

The last plan, and the one with most long term impact, is the ICT Strategic Plan for the new entity. The “ICT” terminology has changed meaning in this decade and now refers mainly to non-strategic and non-creative elements of technological infrastructure. “Digital” is a broader term to include ICT *and* all other elements of an organisation’s use of digital products, services and communications.

This plan cannot be created until a reasonably stable organisational and physical structure is in place (or well defined) and, conventionally, the ICT Strategic Plan will have interdependencies with a Corporate Strategic Plan which in turn would be based on Vision and Mission Plans of the new organisation. Attempting to create and/or implement a detailed final ICT Strategic Plan too early (i.e. before the new entity is fully established) would be a frustrating process with low value returns.

## ICT ASSET GROUPS – PHYSICAL

Much of the physical infrastructure asset base *could* be outsourced/co-sourced during this transition period if required. As long as suitably qualified professionals capable of competently coordinating and controlling contractors are retained by the new entity, this option could reduce risk of system inadequacy or even outright failure. Note that *actual* savings are unlikely if this is properly resourced (despite advice to the contrary from solution providers). The value comes with reducing reliance on individual LG employees to fix specialist problems as they arise and being able to leverage broader skills and/or backup personnel of the vendor.

While several vendors offer “desktop support” at seemingly attractive comparative costs, having LG employees providing desktop support can be more effective, efficient and economical. Any attempt to outsource this function should be carefully researched using user feedback (rather than vendor “vapourware” promises).

The components under this category include traditional “ICT” assets. In general, these should already be quantified, identified and physically mapped, although some assets may not be on central ICT registers.

## NETWORK INFRASTRUCTURE

- Switches, cabling, routers, building links, Comms Racks, WAPs, in-wall and in-ground data reticulation

## SERVER INFRASTRUCTURE

- Servers, Server Racks, Storage, Security Appliances, Network Management Appliances, Data Safes.

## DESKTOP ASSETS

- PCs, Laptops. Brand preference? Minimum standards?

### MOBILE/PERSONALLY HELD ASSETS<sup>3</sup>

- Tablets, Laptops
- Mobile Devices

### TELEPHONY

- Telephone handsets, Mobile phones, PABX,

### WORKGROUP ASSETS<sup>4</sup>

- Printers, CCTV, Video Conferencing, Security, Parking, AV Resources

## ICT ASSET GROUPS – SOFTWARE

As for physical assets, software assets are quantifiable. However, depending on the record keeping of the existing entities and the level of control/management by the existing ICT group, this may be far more difficult to capture and document. Many councils allow purchase of software by departments without the knowledge of ICT management. In the past five years, a huge increase in the availability of “cloud” software has increased the risk of having unmanaged critical systems evolving without adequate controls. Ongoing cost commitments may be hidden so investigation and analysis will be needed.

In addition, many organisations have what ICT professionals call “rogue” solutions. This is where standard software has been used to create a micro-system which may be critical to operations but is not formally supported. Most “rogue” solutions are Excel, Access, CRM or Sharepoint-based and are usually built and supported by individual departmental staff. In many cases, these systems are not made known to ICT staff and may not have useful documentation.

### DESKTOP

- Operating systems
- Applications
- SOE Deployment

### SYSTEMS

Server Management & Monitoring:

- Operating System(s) (e.g. Windows Server, Unix, Linux)
- Virtualised Environment Tools (eg VMWare, HyperV)

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<sup>3</sup> These items may be widely distributed (for example to elected members)

<sup>4</sup> These systems may not be managed by central ICT groups and may not be obvious inclusions during planning

- Directory Services (e.g. Active Directory, LDAP)
- Security
- Storage Management
- Backup/Recovery Tools

Network Management & Monitoring:

- Security (Appliance or software or cloud)
- Performance
- Activity

Digital Threat Management & Monitoring:

- Anti-Virus
- Intrusion Detection and/or Prevention
- Firewall, Proxy, Gateway (in conjunction with relevant appliances or services)

Other monitoring (eg Printing, CCTV, Security):

## ENTERPRISE APPLICATIONS – ICT MANAGED

Almost all of these services are now available as “cloud” offerings. Careful consideration should be given of costs versus benefits of in-house and cloud solutions. If outsourced, services should be actively managed by an LG employee(s) with ICT experience.

- Mail Services (e.g. Exchange)
- Collaboration Services (e.g. Sharepoint)
- Generic database (e.g. MS-SQL, MySQL, Oracle etc)
- CRM (e.g. Dynamics)
- Video Conferencing (e.g. Lync)
- Telephone System

## ENTERPRISE APPLICATIONS – OTHER BUSINESS UNITS<sup>5</sup>

Consideration should be given to location of application software and data. In many cases, “cloud” based solutions are quite viable and may remove some risk elements.

It should be noted, however, especially with core business systems, that additional risk is incurred when using cloud solutions. It is important to recognise and make a choice regarding potential risks.

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<sup>5</sup> These may fit into ICT or other budget areas. They should be considered in context of overall ICT strategy



Some systems lend themselves well to “cloud” operations while others are intrinsically better served by using a local area network (LAN) infrastructure. Systems with high-speed transactional requirements or large file transport (eg Mapping, Design) may perform several hundred times better using a local installation.

- Finance (e.g. Sun, SAP, TechOne)
- HR/Payroll (e.g. CHRIS, TechOne, online)
- Asset Management – LG Infrastructure
- Asset Management – Financial Assets
- Facility Booking Management
- Space Management
- Library (e.g. Unicorn)
- Engineering/GIS (e.g. ArcGIS)
- PPRS (e.g. Civica, TechOne, Infor, ITVision)
- Records (e.g. TRIM, InfoXpert)
- Vehicle Fleet Management
- Other specialist SW

## ICT CONTRACTS

Oversight and analysis of *every* single ICT contract should *immediately* commence at all existing entities. Where possible, action should be taken to reduce contract periods to match projected entity life. Consultations with licence owners (i.e. the vendors) should commence to gauge impacts outlined below, in particular the retained use provisions, scalability and notice required. Failure to gracefully close down superfluous contracts may lead to unexpected liabilities and/or risk of significant data loss or “ransom”<sup>6</sup>

### SITE LICENCES (EG MICROSOFT, TRIM, ADOBE)

- Based on geographical sites, corporate entity or headcount?
- “Concurrent Use” or “Named User” licensing?

### SPECIALIST

- Through ICT group or independent business units (e.g. Library Systems, CCTV software, SCADA systems)

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<sup>6</sup> Ransom in this context refers to the need to continue to pay licence costs in order to access data, even when a system has been replaced. It can lead to double up of payments. This is quite a common reactive stance when vendors are displaced unexpectedly or aggressively.

## SUBSCRIPTION & OUTSOURCING

- Cloud-based services
- Network/Server monitoring
- Web hosting

## EXPIRY PROVISIONS

- Notice required
- Retained use provisions (e.g. a separate PC running a single read-only instance of software so data can still be retrieved in the future)
- Period to run

## SCALABILITY

- Costs – will they double, halve or stay the same?
- Will current model accommodate additional data and/or user requirements?

## ENTITY

- New contracts or subsumed into existing?

## PROCUREMENT REQUIREMENTS AND TIMELINES

- Is a new tender process required for new contracts?
- If so, what is the likely timeline before installation/use is possible?

## DATA/INFORMATION CONSOLIDATION<sup>7</sup>

This is the single biggest challenge for all “digital” amalgamations, regardless of industry. It requires sometimes massive internal effort and is one element that is extremely difficult to outsource. Unless and until information assets are available as a single solution, real amalgamation is impossible. Records, Finance, HR, PPRS and online resources must first be “harmonised” and then merged into one homogenous system or systems.

Currently, different PPRS, HR, Finance, GIS and Intranet systems are in use across NSW councils. Where a consistent approach has been taken (and there is no evidence that this has occurred anywhere) a merged data set may be readily created. In all other situations an agreed “mapping” or “translation” process must take place. This will require significant and possibly contentious discussion in some circumstances. An attempt to gather a *superset* of information (complete with blanks) is more productive long term than a *subset* of “matches only” data.

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<sup>7</sup> Refer also to separate PowerPoint document “Tell me about... Data Migration”.

- Is it compatible?
- Can it be made compatible?
- What will be missing?
- Data Cleansing (effort required and responsibility)
- “Line in the Sand” – when and what.
  - Mandatory
  - Desirable
  - Achievable
- Can systems be scaled up to suit additional records/storage?
- What happens with archival material? (e.g. Finance information, if old system is retired)
- Who is responsible/capable/available for data migration project?

## IDENTITY MANAGEMENT

Prior to work on this area, a reasonably firm notion of the new corporate structure will be required as this will feed into design and decision-making processes. Failure to do so early will seriously impact ongoing operational efficiency for *years* after the amalgamation.

### DOMAIN NAME

- New or Old domain name
- What happens with calls/emails to old domains (bounce, redirect, ignore)
- Are old domains maintained (i.e. continue to be subscribed/owned by new entity)
- If retained – for how long?

### WEB PAGE AND SOCIAL MEDIA

- Old or New identity (or both<sup>8</sup>)
- Responsibility for content?
- Is CMS compatible?
- Who consolidates content? (e.g. two different existing Privacy Statements)
- How long will new or revised website design take?

### EMAIL

- New domain or old?
- Naming convention(s)
- Mailing List integration or re-creation
- Redirection

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<sup>8</sup> Maintaining both websites for a transition period is a fairly common strategy.

- System capacity (Mailboxes, Storage)

## TELEPHONE

- Number ranges (new, consolidated, hybrid)
- In-dialling capacities (e.g. 3 digit extensions, 4 digit extensions)
- In-dialling capabilities (on-net, no call charges)
- System compatibility (software, handsets and transport)
- Network functions required (e.g. PoE, VLANs)
- Computer-Telephone Integration (e.g. Outlook Presence identification)
- Call Centre or Client Services location/operation/integration
- “Main” number and call interception (e.g. Receptionist/Operator)
- Multi-homing and multiple telephony in-feed issues to be sorted.
- What lead time is required by service provider?

## DIRECTORY SERVICES<sup>9</sup>

- Permissions Matrices
- Group Memberships (distribution and security groups)
- Management structure (if included in workflows for example)
- Naming Conventions including resolution of duplicates (e.g. CEO@123 and CEO@234)
- Federated or Integrated as first step?

## LOCATIONS

A key early choice.

Where will Servers, Communications and (importantly) ICT Staff be physically located? Early relocation will help with establishing management structure and provide some stability as ICT groups work together to smooth the amalgamation process. Highly specialised groups (e.g. GIS) may be located in isolation but the risk of disengagement and/or dissension may be increased if this happens.

Along with location is the management structure of the new ICT group. This needs to be absolutely certain and communicated unambiguously to affected staff. Ideally, senior ICT managers should be either collocated with ICT staff or easily and regularly available.

## STAFFING

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<sup>9</sup> Directory Services may benefit from a significant reappraisal and redesign. Most DS structures are ten to fifteen years old and carry a load of legacy attributes that should be removed.

ICT workers are knowledge workers and their productivity is directly affected by psychological pressures. As they will be working with the entire organisation, it is vital that they are engaged with the amalgamation process as early as possible. Their attitudes will colour the success or otherwise of a variety of functions.

ICT management and technical structure should be stabilised as soon as possible, with well supported and assertive senior ICT management. Many decisions which will impact on timings and outcomes will need to be made, often unilaterally. Needing to refer all decisions to a non-technical senior being or, at worst, a committee is a recipe for divisiveness and disaster. However, needing to *communicate* decisions made to an overall coordinating body is vital.

Stabilising the location (see above) is also vital to the success of ICT operations. An attempt to physically remove an “us and them” divide is essential. One effective way to do this is to integrate locations but other creative options such as “dual-homing” of key staff (where they are physically located at different sites on different days) may be practical.

ICT staff who are unable or unwilling to commit to the amalgamation process should be distanced from the project (and the project team). This will be difficult, especially when some will claim to have intimate and sole knowledge of certain aspects of ICT operations. However, failure to remove negative and/or argumentative/disruptive elements from the project team will lead to a poorer outcome delivered in a longer timeframe and a potential loss of other valuable staff.

Where service outsourcing is to be considered, it should be integrated into the overall amalgamation process as soon as possible. This avoids staff uncertainty and allows new systems to be utilised early in the process (for example, outsourcing of email or telephony services may be a desired outcome).

## **INTER-SITE INFRASTRUCTURE**

At present, councils have isolated networks, generally radiating out in a hub and spoke model from the administrative centre of the LG area.

Where public infrastructure lacks capacity or capability or it is economically unviable, the new entity will need to establish effective network links between sites – in particular admin centre to admin centre. If one of the subsumed councils will close down its admin centre in favour of the other, the network links should connect to the closest viable point. “Viable” means having the capacity to service the entire adjacent LG area from that entry point.

Preference should be given to in-ground glass fibre connections. Provision for network redundancy should also be considered, with at least two viable routes available from any one distribution switch

in the network to another. Note that the cost of this redundancy needs to be balanced against risk of link failure (some sites may not warrant redundant links).

Where networks are integrated, performance and monitoring appliances may need to be upgraded or replaced to allow for both compatibility and capacity issues that will arise.

## **TIMING**

To achieve transition success, plan small achievable sub-projects which loosely fit into a bigger scheme. Trying to achieve all outcomes at once will result in staff overload, poor delivery and cost blowouts.

Close off legacy systems as soon as reasonably possible. Keeping parallel systems, unless good reasons exist, will cost more and will encourage change-averse clients to keep using the old systems. This can go on for years after a change is made and can result in unacceptable risks (often hidden) developing.

Consider dependencies so that completed projects don't have to be retrofitted to other project outcomes. (For example, fitting solutions to a network link using public infrastructure

and then needing to retrofit the same solution to a privately owned fibre link. The fibre link should be built first and the solution fitted to just one infrastructure)

## **SUBJECT MATTER EXPERTS (SMES)**

For ICT groups to work effectively and efficiently across the organisation, it is vital for Subject Matter Experts in the various business systems to be available. Considerable cooperative effort will be needed between SMEs from subsumed LGs before realistic decisions can be made about their systems. For example, Finance professionals are more likely to understand the requirements for General Ledger account names and to achieve consensus than ICT professionals.

Most SMEs are not readily apparent from organisational structures and not all SMEs will volunteer to take on the additional workload and/or conflict necessary to create a new agreed structure. SMEs must be hunted out within the organisation(s) and encouraged to actively participate in the amalgamation process.

Where LG employees cannot be identified as SMEs, external agents will need to be engaged. These could be consultants or SMEs from other councils(including inter-state colleagues).

The distinction between a "Subject Matter" expert and an "expert user" must be made. It can be counter-productive to use an expert user who only knows one system (albeit very well). A good

SME may be an expert user but they will also understand the broader discipline they are engaged in (e.g. HR, Finance etc.) and will be open to alternative ways of achieving base outcomes.

## **ICT LEADERSHIP**

ICT Leadership must be both technically credible to ICT staff and business-savvy for LG management.

Leadership through the amalgamation process must be unambiguously defined and fully supported from above. The person in the role should “have some skin in the game” by being an employee of the new entity (definitely NOT a consultant) but they should have the budgetary discretion to bring in technical consultants as required.

The ICT Leader should have some technical credentials and experience. They should have a State-wide (or at least metro-wide) vision and be well informed about contemporary ICT practices and solutions.

## **DIGITAL PRESENCE**

Web pages, Social Media and other online resources fit into this category. This may or may not fit under the ICT umbrella, but it is certainly an ICT-related item.

### **WEBPAGE**

- Is a new site to be created? Who is responsible?
- Is new branding ready?
- Will the old site(s) be retained? For how long? Does it depend on back-end systems? Will they continue to exist/be updated? For how long? Who is responsible?
- Will auto-redirection take place or will “old” sites still exist with a “pointer” to new site.
- Is there a CMS? Who has access and what are the rules?
- Will content be moved/integrated/culled? By whom and when?

### **INFORMATION INTEGRATION – ONLINE RESOURCES**

- Who is responsible? When will it be done?
- Social Media Integration (eg YouTube channels, Wikis, Blogs, Facebook, Flickr etc.)
- Will old sites be discontinued or maintained?
- Who will monitor old/new channels?

## **STANDARD (STATE-WIDE) ENGAGEMENT TOOLS**

Standard online tools, such as for libraries or surveillance will be in use by various departments within LGs. Thought should be given to either integrating data (where direct compatibility exists) or choosing “best of breed” from those tools used. For example, video conferencing may be achieved by several different tools. Choosing a “preferred” tool for use across the new organisation will allow a more consistent uptake of the tool.

Where possible and practical, ensure consistency between new entities.