# Local e-Government Transformation
## An International Comparison

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Abstract:     Governments have invested vast amounts of time, public money, and effort into technologising and transforming public sector relationships, with the goal of achieving optimised government service delivery, governance, and constituency participation. To discover the extent that transformation has actually been achieved by local government organisations, this paper provides a cross-national comparison of local e-government effectiveness as judged by internal stakeholders in Australia, Germany, and New Zealand. It appears that e-government continues to be viewed by the policymakers charged with developing it as something that supplements, rather than displaces, their traditional government services. Far from being transformative, only incremental improvements to internal procedures and service quality were reported.

Electronic government (e-government) can be defined as the transformation of internal and external public sector relationships through Web-enabled operations, information technology and communications, with the aim of achieving optimised government service delivery, governance, and constituency participation (Baum, et al., 2000). Early e-government initiatives were characterised by rudimentary Web services that pushed information to citizens, although it soon became clear that newer e-commerce technologies promised greater interactions with citizens.

Today it is widely accepted that e-government can transform public sector relationships through online services that are user-centred, convenient, integrated, proactive, inclusive, and efficient. By re-engineering existing relationship processes with the aid of computer-based information and communications technologies (ICT) radical improvements to the delivery of public services are being enabled (HMGov, 2005); (Transformation, 2006).

But to what extent has 'transformation' actually taken place? Has the traditional bureaucratic paradigm really been replaced by a new e-government paradigm?

The purpose of the present study was to determine to what extent e-government initiatives have actually achieved transformation within the local government sector. This sector was chosen in recognition of its unique customer-facing role. In stark contrast to similar studies the study considered the impact of e-government from the perspective of *internal* stakeholders and aimed to identify issues associated with the philosophy and implementation of e-government from the perspective of government itself.

To increase the likelihood of detecting evidence of transformative e-government in action, a cross-national examination of e-Government effectiveness in Australia, Germany, and New Zealand is provided. The next section reviews relevant e-government literature to highlight the research gaps addressed by the study. The context of the three case countries is then outlined before the research method and data collection procedures are described. Significant findings are then presented and the paper concludes with a general discussion, limitations and opportunities for further research.

## 2 LITERATURE REVIEW

### 2.1 Local e-Government

Local e-government is defined as any dependent and independent geographically defined government entity that delivers services to citizens online. In contrast to their central government counterparts, local authority organisations are more strongly focused on providing front-line services to citizens. Developed and developing nations are moving away from the paradigm of government as a bureaucratic faceless organisation (Exec, 2003); (King and Cotterill, 2007); (State Services Commission, 2007) to one which is responsive; makes extensive use of ICT; and treats citizens as customers (Ho, 2002); (Moon, 2002); (Newman et al., 2001).

Although citizen-centric research has increased our knowledge about user perceptions, the patchy uptake of many e-government services (Kotamraju and van der Geest, 2012) makes it imperative to also understand the policymaker's perspective.

### 2.2 e-Government Effectiveness

Given the vast amount of time, public money and effort that national and local governments have invested into transforming public sector relationships with technology (Affisco and Soliman, 2006); (Sarikas and Weerakkody, 2007), e-government effectiveness has long been a topic of interest for researchers. Much less common than studies into the impact of e-government on citizens, is the view of the policymaker who happens to be closest to the action and charged with the 'decision, development and implementation' of e-government initiatives.

### 2.3 e-Government in Germany

The German government comprises administrations at the Federal, State, and Local levels. Authorities at each level are responsible for different tasks and are organized in different ways. Similar to Australia and New Zealand, Germany is a long-time leader in e-government as demonstrated by its position in the UN e-government rankings (UN, 2012).

In Germany, the term 'local government' actually covers 22 administrative districts, 301 counties, 112 urban municipalities, and 12,234 municipalities (Fuchs, 2009). German local governments, while they are subject to certain restrictions, are entitled to administer themselves. They are free to structure their organization, manage their human resources, and organize, plan and design their territory as well as manage their own finances. The current e-government strategy is laid down in the 'eGovernment 2.0' programme (eGov, 2006) and aims to create a fully integrated e-government landscape throughout all government administration levels.

### 2.4 e-Government in Australia

Australia comprises 6 states and 10 territories and its local government sector comprises some 550 individual bodies and councils (Hearfield and Dollery, 2009); a number that has been steadily declining due to amalgamations. Legislation and control of local government occurs at the state or territorial level rather than the central (federal) level. Thus, local councils, which provide various services, also control local infrastructure.The national portal (http://australia.gov.au) acts as a one-stop-shop that connects citizens to the information and services of around 900 government websites and state and territory resources. Australia's e-Government Strategy is laid down in the Australian Public Service Information and Communications Technology Strategy 2012 - 2015 (APS, 2012). This is built on a vision that 'interactions with people, businesses and the community will occur seamlessly as part of everyday life.'

### 2.5 e-Government in New Zealand

In New Zealand, local government is subordinate to central government (Palmer and Palmer, 2004); (Tomblin, 2004). Two distinct types of authority provide local government services: territorial authorities (city or district councils) and regional councils. City and district councils are tasked with providing day-to-day services to their communities.

The current e-Government strategy in New Zealand is described in 'Enabling Transformation: A Strategy for E-government 2006' (Transformation, 2006), which reflects recent changes in technology; particularly the growth in social networking

Research conducted by the authors, including in New Zealand, has identified significant variations in the adoption of e-local government in terms of money and effort expended, and the associated commitment to widespread adoption of emerging technologies. (Deakins and Dillon, 2002); (Dillon et al, 2006)

## 3 METHOD

A survey instrument containing qualitative and quantitative questions was used to gain a cross-national comparison of e-local government effectiveness from the perspective of the internal stakeholders, This was developed by the authors and used to collect primary data from a convenience sample of local e-government organisations located in three countries acknowledged to be high-performers in e-government terms.

The general form of statements used in the survey was: "Please indicate, by circling one number for each statement, the extent to which you would consider each of the following when developing or maintaining your web site". Statements were arranged on a six-point Likert scale.

The German sample comprised e-government policymakers from the state of North Rhine-Westphalia, which contains four of Germany's largest cities and is the most populous state in Germany (around 18 million citizens). The survey was translated into German for these respondents and then verbally checked with other members of the research team to ensure that the intended meaning had not been lost. The Australia sample was confined to the 73 local authorities in the State of Queensland, which has a population exceeding 4 million people and is the third most populous state in Australia. The New Zealand sample comprised all 78 local authorities in the country, which together service a population of some 4.5 million citizens.

In mid-2012 a pilot version of the survey was revised prior to being sent to specifically targeted individuals within the selected organisations. Recipients were guaranteed anonymity and reminders were issued after two weeks to improve the response rate. The purpose of the study was outlined to the recipients, who were requested to forward the survey to "the person in charge of website policy and design".

## 4 FINDINGS

The response rates are shown in Table 1. While the number of responses from the Australian and German studies was relatively low, it is judged that the results are a fair representation of the relevant issues in those two countries.

Table 1: Survey Response.

|  | Sample Size | Surveys Returned | Response Rate |
|---|---|---|---|
| Australia | 73 | 10 | 14% |
| Germany | 427 | 68 | 16% |
| New Zealand | 78 | 24 | 31% |

### 4.1 Demographic Information

A key aim of this study was to detect evidence of transformative e-government in action by examining acknowledged leaders in e-government development. Table 2 summarises relevant demographic information across the three samples. It is apparent that a significant proportion of local authorities in all three countries have fewer than 500 employees (73.5% in Germany, 60% in Australia, and 83.3% in New Zealand). In both Germany and Australia, a higher proportion of local authorities employ more than 1,000 employees.

It is interesting to note that, even though the average catchment populations of the local authorities are similar, the New Zealand citizen/staff ratio is significantly higher. New Zealand organisations generally tend to be small, with some 97% having 19 or fewer employees (SMEs, 2012). Also, NZ local authorities do not offer health or education services thereby requiring fewer staff.

### 4.2 Development Philosophies

To elicit understanding of the rationale behind local e-government initiatives, the respondents were asked to consider the nature of the development philosophies that underpin e-government projects. The development philosophy alternatives in Table 3 were presented for consideration.

The results shown in Figure 1 relate to the development philosophies that underpinned e-government initiatives in the recent past. Similarly, Figure 2 shows the development philosophies which are currently driving new e-government initiatives.

Generally-speaking little change is reported between the development philosophies of the recent past and what is current. For example, it is interesting to note that in an era of Web 2.0 services, that both Australia and New Zealand local authorities are planning to push even more information to citizens. This suggests that the old philosophies are believed to be still relevant and that a relatively 'steady as she goes' strategy is being played out. This is in line with governments' often cautious approach to adopting ICT.

Table 2: Demographic Information.

| UN eGov Index: | World average = 0.4877<br>* best = 0.9283 Rep. Korea<br>* worst = 0.0640 Somalia | | | | | |
|---|---|---|---|---|---|---|
| Country (Rank):<br>UN eGov Index | Australia (12)<br>0.8390 | | Germany (17)<br>0.8079 | | New Zealand (13)<br>0.8381 | |
| : Online services<br>: Telco Infrastructure<br>: Human capital<br>(2012 values) | 0.8627<br>0.6543<br>1.0000 | | 0.7516<br>0.7750<br>0.8971 | | 0.7843<br>0.7318<br>0.9982 | |
| | No. | % | No. | % | No. | % |
| Number of employees in organisation | R=10 | 100 | R=68 | 100 | R=24 | 100 |
| 0-99 | 1 | 10.0 | 21 | 30.9 | 5 | 20.8 |
| 100-499 | 5 | 50.0 | 29 | 42.6 | 15 | 62.5 |
| 500-1,000 | 1 | 10.0 | 7 | 10.3 | 2 | 8.3 |
| >1,000 | 3 | 30.0 | 11 | 16.2 | 2 | 8.3 |
| Average number of employees | 871 | - | 793 | - | 361 | - |
| Average catchment population | 115,750 | - | 75,222 | - | 91,235 | - |
| Average number of citizens per employee | 133 | - | 95 | - | 253 | - |
| Used consultants in last 12 months? | - | 60.0 | - | 33.8 | - | 54.2 |
| Website spend<br>(€ per citizen) | This year | Next year | This year | Next year | This year | Next year |
| | 0,07 | 0,06 | 0,10 | 0,17 | 0,16 | 0,80 |

Table 3: Local E-Government Development Philosophie.

| 1 | A website to push information to citizens via mailing lists | 7 | A website initiative that recognises the continued importance of a physical presence |
|---|---|---|---|
| 2 | Accessibility for ALL citizens | 8 | A website to provide integrated channels that satisfy citizens on all fronts |
| 3 | A website to provide information in response to citizen requests | 9 | Dedicated to the concept of e-democracy |
| 4 | A website to provide links to useful information and services | 10 | An intention to reduce physical sites and the electronic operation grows |
| 5 | A website as just an extra channel for information & services | 11 | Resisting the e-government trend |
| 6 | A website to foster collaboration with contractors or suppliers | 12 | A website focused on revitalising existing physical operations |
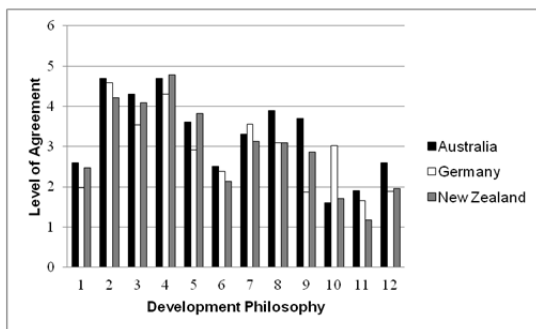


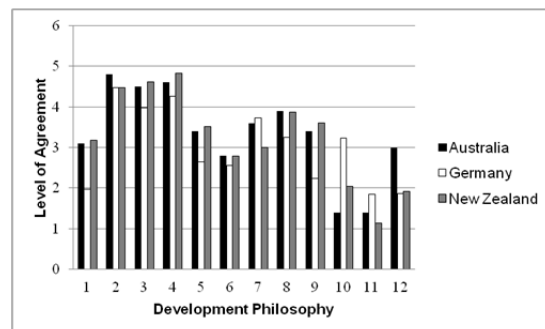Figure 1: Past Development Philosophies.



Figure 2: Current Development Philosophies.

To provide more detail on what is being planned, respondents were quizzed on the importance of a range of development issues, Table 4. It is interesting agreement on the top-three ranked issues (Accessibility to all citizens, System security, and Operational efficiency). Although not as strongly expressed, there is also agreement with the lower ranked issues: with e-tailing, internal cultural obstacles and private sector partnerships receiving least consideration. The largest difference concerns the subject of the digital divide.

A final observation for this section concerns the average response score expressed by the German respondents, which was significantly lower than the corresponding Australian and New Zealand data values. From examination of the data it is questionable whether this difference reflects a systematic cultural difference to professionals responding to survey questions, which if true would require some form of standardisation to achieve comparability.

## 4.3 Impact on the Organisation

To understand the effect of e-government initiatives on the organisations themselves, six potential impacts were offered for consideration:
1. Significant improvements in organisational performance
2. Significant changes to organisational structure
3. Significant changes to roles & responsibilities
4. Significant increase in the number of the services provided
5. Significant increase in the quality of services provided
6. Fundamental changes to internal procedures
A reasonable level of consistency across each of the country responses is shown in Figure 3.
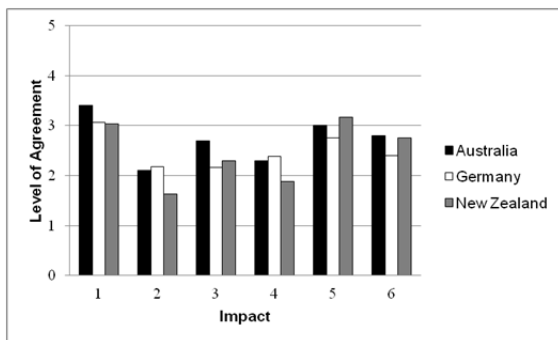


Figure 3: Organisational Impact of e-Government.

Relatively low scores for significant changes to organisational structure; significant changes to roles

& responsibilities; and significant increases in the number of services all provide further support that many local authorities consider e-government as adding to existing physical operations, rather than a means of achieving organisational transformation.

Although policymakers expressed higher scores for having achieved significant improvements in organisational performance and a significant increase in the quality of services provided, it would be interesting to have a comparison with citizens' perceptions. Overall, it may be concluded that the results provide little support for the notion that e-government has been transformational for these local government organisations.

## 4.4 Use of Mobile Devices

With a view to understanding future developments, respondents were asked how well suited were their e-government initiatives to offering mobile technologies. Five 'issue' statements were offered for consideration:
1. Using mobile devices would be very easy for all stakeholders
2. Using mobile devices would be very convenient for all stakeholders
3. There is too much uncertainty associated with using mobile devices for local government transactions
4. Mobile devices are very risky compared with other ways of transacting
5. Financial transactions using mobile devices are very secure

Figure 4 indicates strong and consistent support for policymakers' belief that mobile devices offer convenience to citizens and other stakeholders and would be very easy for all stakeholders. However, this support is countered by concerns about their security, particularly for financial transaction.
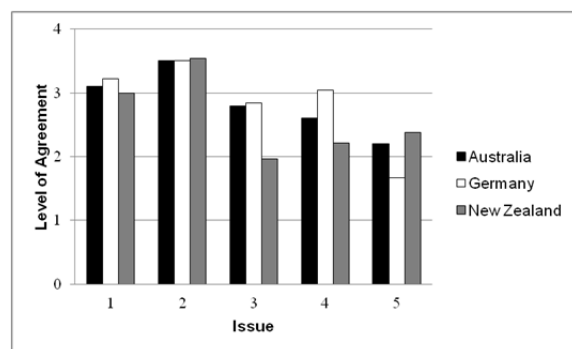


Figure 4: Potential Use of Mobile Devices.

Table 4: Development Issues.

| Characteristic | Germany | | Australia | | New Zealand | |
|---|---|---|---|---|---|---|
| | Average | Rank | Average | Rank | Average | Rank |
| Accessibility to all citizens | 4.52 | 1 | 4.70 | 2= | 4.54 | 3 |
| Local tax collection | 2.09 | 13 | 2.00 | 15= | 2.58 | 13 |
| System security | 4.34 | 2 | 4.80 | 1 | 4.58 | 2 |
| Operational efficiency | 3.88 | 3 | 4.70 | 2= | 4.63 | 1 |
| E-tailing | 1.35 | 16 | 2.00 | 15= | 1.88 | 16 |
| Internal cultural obstacles | 1.81 | 15 | 3.20 | 12 | 3.30 | 11 |
| The digital divide | 1.98 | 14 | 3.30 | 11 | 3.71 | 9 |
| Citizen privacy | 3.58 | 7 | 4.50 | 5 | 4.38 | 4 |
| E-business/e-government legislation | 3.62 | 6 | 4.60 | 4 | 3.92 | 8 |
| Citizen confidence with local government | 3.49 | 8 | 4.30 | 6 | 4.09 | 6 |
| Internal IT workforce capability | 3.75 | 4 | 3.90 | 9= | 4.21 | 5 |
| Needs of minority groups | 3.11 | 9 | 3.90 | 9= | 3.63 | 10 |
| Private sector partnerships | 2.33 | 10 | 2.40 | 14 | 2.29 | 15 |
| Citizen trust of local government | 3.70 | 5 | 4.20 | 7 | 3.96 | 7 |
| Intended and unintended social effects on citizens | 2.11 | 12 | 4.00 | 8 | 3.08 | 12 |
| E-procurement | 2.19 | 11 | 3.00 | 13 | 2.38 | 14 |
| Average score | 2.99 | | 3.72 | | 3.57 | |

German local authorities appear to have least confidence, which is worthy of further investigation since it is unclear whether they are naturally risk averse or have more knowledge of security matters.

In contrast, New Zealand respondents appear to be much more positive about transacting with mobile devices, which may reflect both the country's relative isolation and its recent ranking as the least corrupt and the best country in the world in which to conduct business (Forbes, 2012).

## 5 CONCLUSIONS

Many authors have foreshadowed the transformational effects of information technology on government, indicating that it that will offer improved access and delivery of information services to citizens, business partners, public sector employees, and other governments, agencies and entities (e,g., Affisco and Soliman, 2006); (Baum, et al., 2000); (Ho, 2002); (Shan., et al., 2011).

The purpose of this research was to determine the extent that government transformation has actually been achieved by local government organisations. To this end, it compared and contrasted the views of local government policymakers in Australia, Germany, and New Zealand regarding their own e-government

initiatives and how the organisation has been impacted. Changes in attitude were also assessed.

In spite of the fact that acknowledged 'world e-government development leaders' were targeted, it appears in general that contemporary information communication technology is merely viewed as a convenient means of supplementing traditional government services. This has resulted in only incremental improvements to service quality, if compared against what is foretold. Furthermore, given the continued lack of support for radical changes to be made to traditional government processes, it is unlikely that any deep-seated transformation will happen any time soon.

These findings are only tentative since the main limitation of this study is its failure to achieve a 100 percent response rate. This gave an incomplete summary of the views of local authority policy makers in each of the countries sampled. A broader sample of exemplar countries is also desirable.

Opportunities for further research were noted in the paper. In particular, a deeper understanding of the factors inhibiting transformation is needed in view of the vast amounts of time, public money and effort currently being expended on e-government initiatives around the world.

# ACKNOWLEDGEMENTS

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