An Information Ecology Approach to Sustainable e-Government Among Small Island Developing States in the Pacific

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Abstract
Regional and global strategies to bring the benefits of e-government to Pacific Island Countries (PICs) have been less successful than anticipated despite large amounts of aid expenditure. National policies and projects likewise struggle to overcome the barriers of geography, isolation, climate, education, language and economic resources that face all Small Island Developing States (SIDs) when implementing ICT infrastructure and applications. In addition, cultural factors specific to each PIC must be taken into account when developing e-government applications, including cultural attitudes to knowledge and the dissemination of information. The paper proposes a new framework, based on the concept of an ‘information ecology’ that will acknowledge the way in which information ecologies influence behaviors at several levels, including regional, national, sub-national and local. We believe that this framework will better support the development of locally grounded, culturally relevant, sustainable and effective e-government policies in the region. The paper outlines some of the background to this project and progress to date.

1. Introduction
The introduction of information and communication technologies (ICT) to the operations of government (usually referred to as e-government) is widely regarded as ‘transformational’, increasing efficiency, productivity, and accountability, and promoting economic growth, along with greater citizen involvement [1]. But many developing countries are not well placed to take advantage of the ICT revolution because of their geographical, cultural and economic circumstances [2]. Amongst these are numerous Small Island Developing States (or SIDS).

In most SIDS, including those that make up most of the Pacific Island Countries (PICs), two key factors prevent states from benefitting from the opportunities for development that e-government offers: these are lack of ICT infrastructure and policy [3, 4, 5], and inappropriate cultural models of e-government derived from industrialized mainly Western countries [6, 7]. In the Pacific region and elsewhere, consultants, aid agencies and innumerable regional working parties and forums have explored for over a decade the barriers preventing the uptake of e-government in developing countries [8, 9, 10]. But success in these projects and strategies remains elusive, uptake of e-government remains low. Furthermore, despite numerous reports, the body of knowledge on e-government in SIDs is descriptive, limited in scope, and has not resulted in significant change in policy. There appear to be a range of factors leading to this ongoing situation, some of which have been identified, but to which no solution seems to have been found. Which leads us to an urgent question: Why do so many of these initiatives fail? What is hindering the development of effective policy and implementation of e-government? How can we engage local culture and governance structures to ensure the success of e-government and bring its potential benefits to the region? Do the answers lie in the physical, economic and developmental domain, or is a new approach required that could replace the western-based industrial model applied to date, and support more relevant and sustainable e-government policies and practices?

In this paper we begin to address some of these questions, and outline a radically different approach to the development of e-government in the Pacific Island states. Applying an ‘information ecology’ framework, an approach that explores the way “people create distribute, understand and use information.” [11], this broad and long term project will focus on working within the many cultures of the Pacific, and, in particular, within local culturally-based attitudes to the ways in which information and knowledge are both created and transferred within the community. Furthermore, by reconceptualising e-government from a more culturally appropriate and empirically-grounded base, we hope the outcomes of the research
will constitute a major new theoretical contribution to the e-government literature relating to Small Island Developing States including those in the Pacific. This paper reports on the early stages of this research, which will over time draw on the extensive connections of the research team as the research extends across the Pacific. It outlines the theoretical base of the research, the arguments for a new approach, defines that approach and includes information from a small scoping study that will inform the next stages of the project.

The small isolated states and territories of the Pacific, many of which comprise numerous islands and atolls, range from small countries with populations of just over 1,000 to Fiji with a population of ¼ of a million, and Papua New Guinea with a population of nearly 7 million, although most have around 15-20,000 people [12]. They vary greatly not only in size and population, but in income, ethnicity, culture, and language. They are spread over some 30 million square kilometres, stretching from the Commonwealth of the Northern Mariana Islands in the North-West Pacific Ocean to Pitcairn in the South East. In Melanesia, which accounts for 87 percent of the total population of PICs, 82 per cent live in rural areas and remote communities. In Polynesia, 62 percent of an estimated 650,000 live in rural areas while in the smaller Micronesian states, 34 percent of an estimated 546,000 are rural inhabitants [13]. Although they represent only 0.1% of the world’s population, the region is home to one third of the world’s languages; there are over 700 languages spoken in Papua New Guinea alone. This ethnic and cultural diversity, combined with large distances, small scale and scattered populations and markets, and a low level of investment in telecommunications and human resources [14, 10] as well as lack of ICT literacy amongst their populations, means that PICs face major challenges in implementing ICTs let alone effective e-government [15, 16, 17].

They also vary greatly in forms of governance. As Graham notes, the intricacies of the “architecture of Pacific regionalism” must also be taken into account in any discussion of e-government [18]. Some twenty Pacific states vary in status from sovereign nations, to states in free association, to dependent states—and these variations in political status affect systems of government, the powers and functions of political leaders, sources of public finance, and the ability to collaborate in international organizations. Not all Pacific states, for example, are recognized at the United Nations, whereas degree of sovereignty is less important to membership in the Pacific Islands Forum—the premier regional organization which coordinates regional policy formulation alongside nine additional regional organizations within the Council of Regional Organizations of the Pacific (CROP). Differential access to international organizations implies differential support for the introduction and development of ICT capacity, which underlies the capacity for e-government. Given the diversity and isolation of Pacific states domestically and regionally, successful multi-level governance requires coordination of political and bureaucratic actors at local, sub-national, national, sub-regional and regional levels—in addition to internationally. This is a key factor in development policy in the Pacific. For simplicity we can refer to this as the micro, meso and macro domains of policy and action in Pacific governance and government.

2. The transformational nature of e-Government

Most of the literature referring to the transformational nature of e-Government is focused on developed western nations, or industrialised developing nations. The concept is applied in two key ways; it includes both transformation of the processes within government, as well as the transformation of external processes, which can be identified with either government or governance [19]. From the Information Systems perspective ICTs are seen as both a facilitator and a driver of organizational change, leading to efficiency, better more responsive (or citizen-centric) services, and often to business process reengineering. At the same time, the public administration literature has tended to focus on the capacity for ICTs to change the relationship between government and citizens, changing governance processes and transforming democracy, through the use of ICTs for e-consultation, e-participation and crowd-sourcing [19]. Both models are credited with increasing transparency and reducing corruption.

Both internal and external transformation through e-government have the potential for profound impact on all involved in governance, and those who are governed. The United Nations itself continues to emphasise the transformation of government through the use of ICT, defining three main phases of e-government, that developed and developing countries should aim at:

- **Infrastructure:** Creating an information infrastructure both within the public sector and across society at large, one based upon reliable and affordable Internet connectivity for citizens, businesses and all stakeholders in a given jurisdiction;
**Integration:** Leveraging this new infrastructure within the public sector in order to better share information (internally and externally) and bundle, integrate, and deliver services through more efficient and citizen-centric governance models encompassing multiple delivery channels; and

**Transformation:** Pursuing service innovation and e-government across a broader prism of community and democratic development through more networked governance patterns within government, across various government levels and amongst all sectors in a particular jurisdiction. In shifting from infrastructure to integration and then to transformation, a more holistic framework of connected governance is required [20].

However, as the UN’s own reports make clear, many nations have not experienced the increased efficiency, productivity, accountability, economic growth, that e-government promises, and the greater citizen involvement that e-governance potentially offers. This is particularly the case in the Pacific region, where despite extensive aid projects and ICT initiatives aimed at increasing e-government capacity, adoption of e-government remains low and thus far has had little impact.

3. The current state of e-government in the Pacific

According to the UNPan 2012 E-government Development Index, which ranks 190 out of the 193 Member States, countries from the Pacific region have a low level of e-government readiness and uptake. Fiji has the highest ranking in the region (at 105), Samoa and Vanuatu are ranked at 114, and 115, the Solomon Islands at 168, and Papua New Guinea is ranked at 177. The Index is based on a comprehensive survey of online presence and other factors resulting in a weighted average of three normalized scores on the most important dimensions of e-government, namely: scope and quality of online services, status of telecommunication infrastructure, and human capital. Countries are rated as emerging, (government web sites provide information on laws, regulations, documents and services, and link to agency sites), through enhanced, to transactional (where governments engage in two way communication with citizens, including accepting input on policies), and the fourth stage, connected. In this last stage governments use Web 2.0 and interactive technologies to seek citizens input; e-services and e-solutions cut across ministries and agencies [21]. The 2012 survey has an explicit focus on sustainable development “to deliver improvements in the standard of living in such a manner that development today does not compromise development tomorrow”, and advocates a holistic approach to governance that that requires “strategic national planning to ensure efficacy, transparency, responsiveness, participation and inclusion, in the delivery of public services” [21]. The report overtly recognizes the impact of economic development on an ongoing and growing digital divide.

A number of Pacific-based experts provide background to these rankings, and suggest why Pacific countries do not score well on these indexes:

“If we look at processes at the micro level, government IT services have rarely moved beyond the single function, payroll, personnel, some records, maps, statistics and of course tourism. All countries and many agencies have web presences, e.g. the Solomon Islands has just (re) launched theirs with support from UNESCO, the police in Fiji have theirs but the level of content is low. Some are hosted externally e.g. by friends (Tuvalu) or through other agencies (UN) reflecting low levels of integration with government process, and most suffer from lack of maintenance “[16].

Noting that, in general, the ICT sector in most countries of the region is immature and underdeveloped, Jorari, Budden and Taufao comment “Only four countries (Fiji, Guam, New Caledonia, and PNG) have submarine fibre cable access to the global backbone for telephony and the Internet,” and that “low levels of access have hampered the development of government services, economic development, and social cohesion, and placed a brake on development of services” [13]. In the case of Fiji, the establishment of an Information Technology and Computing Services unit (ITC) in 2000 has facilitated the growth of e-government capacities virtually across all ministries and agencies [22].

The Pacific Regional Digital Strategy was developed by the Pacific Island Forum Secretariat in 2005 as part of The Pacific Plan for Strengthening Regional Cooperation and Integration [23] and the associated Pacific Island ICT Policy and Strategic Plan (PIIPP) to promote economic growth, sustainable development, good governance and security in Forum countries. The Strategy recognized that ICT had a critical role to play in countries meeting their Millennium Development Goals, and notes that the establishment of vibrant and market-driven ICT sectors are essential to this development. The Strategy highlights as priorities: improving access to communications technology; reducing costs; establishing higher bandwidth to the global ICT ‘backbone’; removing inappropriate regulatory environments in order to foster higher levels of investment; strengthening ICT skills. The Plan notes
that e-government, e-commerce, and e-training are all dependent on access to the Internet and computer literacy among populations [23]. The Plan advocates:

- **Structural change in the ICT sector** (including policies to facilitate sector development, competition, a commercially-driven sector with privatization, corporatization of telecoms/ICT services, harmonization of laws and protection of privacy, data security and IP rights);
- **Infrastructure development** (construction of domestic telecoms and information infrastructure);
- **Accessibility** (universal access);
- **Capacity building** (including flexible and appropriate ICT education and training to promote the participation of women and disadvantaged groups, and local content) [23].

In 2010 the Pacific Islands Forum commissioned a review of the Pacific Regional Digital Strategy, a key finding of which was that despite considerable liberalization in recent years “telecoms penetration and availability in many of the Pacific Island Countries (PICs) are generally low when compared to developed countries” [23]. International connectivity continues to be a major issue. “Governments and households with scarce resources still struggle to meet very basic needs with the result that ICT cannot be a priority. While in some PICs the increase in availability and accessibility of mobile phones is certainly providing new social and economic opportunities, developmental potential offered by the Internet is still unattainable for most” [10].

The review notes that in many PICs’ ICT policies address the need for basic e-government initiatives, but concludes that while “most Forum countries plan to implement e-government, many are still grappling with the five evolutionary steps that lead to e-government”, defined as:

1. Computerising ministries and departments;
2. Establishing networks between these;
3. Developing secure email and internet access;
4. Developing web sites; and
5. Developing applications providing G2B and G2C services.

The review notes that most PICs have achieved steps 1, 3 and 4, but that Fiji is alone in achieving, at least minimally, all 5. (The crucial G2G step, 2 is achieved by few PICs.)

Aid projects supporting these goals across the Pacific include: a joint Cook Islands/United Nations Development Program [24] e-government system, including e-government services, training and delivery to outer islands; the PeopleFirst Network (PFnet) supported by UNDP to establish connectivity between remote locations. Other aid projects implemented in the past decade by agencies such as the International Telecommunications Union (ITU), the European Union, the World Bank, and the Japan International Cooperation Agency (JICA) have contributed significant financial resources to the strengthening of ICT infrastructure and training of local stakeholders, (some incidentally, such as the JICA-Fiji Community Disaster Risk-management Project). Other key regional ICT projects currently managed by the Pacific Islands Forum Secretariat and the Secretariat of the South Pacific include the Rural Internet Connectivity System (RICS), South Pacific Islands Network (SPIN) focused on international connectivity through fibre optic cables, and the Oceania One Laptop per Child (OLPC) projects, most of which are overseen by the PIFS’s Pacific Plan Digital Strategy. Many of these are underway in a number of countries. In addition there are innumerable small projects, at agency level, in many Pacific Island countries, many of which have an ICT or e-government component [24].

4. Potential of e-government in the small island states of the Pacific

In adopting the Pacific Plan in 2005, Pacific leaders identified ICTs as “a powerful development and stabilization resource . . . to accelerate the development of ICTs in the region” [13]. At the same time, Jorari et al note that the potential of e-government in the Pacific has barely been touched. Although the historical governance models of the Pacific were overturned during the colonial period, the authors suggest “with ICT, new models of inclusiveness are possible. Such models need to mirror the diversity of the society and be capable of fostering regional stability and security. The introduction of e-government services that merely digitize current processes will certainly increase the reach and efficiency of government but risk perpetuating power relationships [13].”

Jorari et al also argue that the instant wide coverage provided by the Internet is encouraging positive changes to government policies, procedures, and operations, and that this is important particularly in light of concerns about the lack of transparency, corruption and the costs of doing business with government that affect the region [13]. Furthermore, the potential of e-Government in the Pacific to meet the need for access to Government services, to improve the transparency of their delivery, to unite, to improve the effectiveness of administration in areas such as security, health, education, agriculture, land, forestry through the “automation” of processes is magnified in Pacific countries because of disadvantages they suffer
due to the “tyranny of distance”, small scales, and “social structural complexities including languages and the relative immaturity of the political orders in western terms.” [16]. As Imran and Gregor [25] note, such changes would be dependant on leadership and political willingness to initiate change within the government sector. Changes not necessarily imminent given the complexity of relationships between government, the business sector (mostly SMEs in this group of LDCs (Least Developed Countries)) and the international donor environment they are dependant on.

5. Lack of evaluation and relevance of initiatives

Moreover, while a number of projects aimed at building capacity and access to e-government in developing countries have been implemented, many of these projects have not been formally evaluated, and amongst those that have, there are few insights into potential strategies to improve the situation. Evaluation is often regional, generalised, and high level [4, 26, 10, 14]. Furthermore, Heeks argues that the evaluation literature is typified by a lack of focus on the issues from academics, researchers and consultants, a lack of resources (in the academic community), and lack of will to evaluate among aid agencies. In addition, he notes, the field is dominated by case studies of individual projects, which “provide no basis for estimation of overall failure/success rates.” [2].

One exception is “Outcome Evaluation of the Information and Communications Technology For Development (ICT4D) Project of the UNDP Multi-Country Office Based In Samoa”, in which e-governance projects in Niue, the Cook Islands, and Samoa were evaluated by Boase in 2009 [27]. Noting that in many projects delays in UNDP quarterly advances impeded project implementation, and that project managers’ accountability was often lacking, Boase comments “without accountability projects tend to drift off target and fall behind schedule and this is what happened with all three projects” [27]. Generalising from these findings, Boase identifies key factors affecting the adoption of ICTs and e-government across the region. “ICT is still relatively new in the islands and it faces formidable challenges” [27]. In addition to the vulnerability of Internet hardware in these small island states, due to cyclones, power surges and outages, human resources for developing and servicing ICT systems on the supply side and, on the demand side, potential for the use of the technology by public servants and the general public are limited. Added to these factors are the cost of developing and maintaining systems on limited government budgets, and the sluggishness of the Internet that frustrates users and consumes inordinate amounts of time. The technology, he concludes “has jumped out ahead of many neophytes’ ability to use it. What is needed now is a focus on building computer literacy” [27]. Boase concludes that it is premature to talk of these projects’ contribution toward the UNDP’s global objective of poverty reduction. The internet is still the domain of the educated and privileged in these societies, and the intended outcomes for these projects are basically irrelevant to the actual situation on the ground [27]. John Budden, former Economic Infrastructure Advisor to the Pacific Forum Secretariat, agrees;

“The reasons for this relative lack of progress are many—indecisive leadership and frequent changes of direction not to mention government, overall slow economic development, absence of infrastructure to ensure ubiquitous access and justify development, and donor driven development are among them. The relatively low needs for government administrative services e.g. tax and licensing, in village settings probably impacts on demand as does the traditional decision making.” [16].

6. The need for e-government development to fit with the local context

In addition to the economic, developmental and physical impediments to the adoption of e-government noted above, several authors have suggested that there are other more deep-seated factors involved. Imran and Gregor argue: “theory on how the government sector in particular in LDC’s should operate appears to be almost entirely lacking . . . One problem is that [established theories on ICT adoption] have been developed and tested primarily in the context of developed or Western countries and are possibly not relevant in the context of many developing countries and LDC’s” [25]. We would go further, and argue that these models of ICT adoption and e-government should not be transferred without taking into account the distinct approaches to the ownership and use of information in Pacific cultures, the alignment of information with tribal and political elites, and alternative flows of information around these ‘islands’ of power. Noting not only the diversity of the countries of the Pacific, but also the fact that most inherit and some are still largely dominated by forms of traditional governance which is collective, and where land and other possessions are communally
owned, Budden argues: “We should also be wary of burdening ICTs with expectations as their potential cannot be realized in isolation from the social and cultural environment in which they exist” [16]. The risk of imposing global models of ‘sustainability’ and ‘capacity building’ can be seen as a new form of ‘cargo cult’, development projects that fail to engage with the local social order [28], or what Heeks describes as the “if it works for us it will work for you” mentality of the IT multinationals, consultants and aid agencies [8].

In this context, it is wrong to assume which categories of knowledge can be regarded as “public” and which are “private” when such matters are culturally determined. In many Pacific traditions, knowledge of land ownership and usage rights was and in some cases remains protected within a community rather than shared, just as knowledge of material production, food sources, and traditional remedies was considered a source of wealth and was not to be exchanged freely, unless there was some form of beneficial return. In the context of Solomon Islands, for instance, Gegeo [29, 30] has explained how the knowledge systems of the Kwa’ae people of Malaita in the Solomon Islands direct their attitudes toward development planning. Similarly, Lindstrom [31] shows how among the Tanna in Vanuatu, community leaders sought to benefit through controlling the dissemination of new economic and technical knowledge. Pacific societies, and their bureaucracies, are not alone in developing “information silos” which do not easily share with external agents information that constitutes their comparative advantage. Yet most Pacific societies include an additional cultural influence on access to information in the form of relational systems of ethics, which expect one to deal preferably with one’s kin than with all others. The ‘wantok’ culture of Melanesians, the ‘kekeke’ invoked by Fijians, and various forms of clientalism in other Pacific cultures [32], whilst sometimes seen as public sector corruption [33], can at other times provide a society’s most effective form of social protection [34].

7. Research framework: applying an ‘information ecology’ approach

It is for this reason that in this project we have adopted the ‘information ecology’ metaphor as our research framework. This concept, developed by Davenport in 1997 [11], was a revolutionary way of approaching how information management practices, including but not exclusive to technology, can be used within an organisation or broader context to take into account the information flows, information uses, as well as the power battles, politics and territorial conflicts that impact on the effective transfer and use of information. Applying an ‘information ecology’ approach to the way “people create, distribute, understand and use information,” [35] will enable us to investigate the “evolving interactions and relations between a diversity of actors, their practices, values and [use of] technology within their specific and local environment. . . . The information ecology approach leads us to look at the total environment, and understand that information is not unequivocal, that it can have different meanings for various stakeholder groups and can be disputed.” [35].

As Bekkers and Homburg also note: “the interactions between these stakeholders do not occur in a vacuum. They are embedded in a specific cultural, political, intellectual and economic environment in which specific ‘rules’ guide the behavior and interactions between these stakeholders as well as the meaning that will be attached to the use of ICTs.”

These understandings provide a more appropriate framework for the cultural and governance systems of the Pacific communities we have described above. It is a radically different approach from the technocentric model that has driven e-government implementation and research to date; it focuses on the local, and asks, ‘whose interests?’ ‘who benefits?’ ‘who are the actors here?’ ‘what motivates them?’ and ‘what are the models of governance?’ We believe this approach will allow us to take into account both the information cultures of the Pacific Island states we are investigating, and with better understanding of the actual situation on the ground, develop a Pacific model of e-government that has a ‘Pacific’ concept of sustainability at its heart.

The whole project will, over a period of 2-3 years seek to use the ‘information ecology’ approach, exploring attitudes, needs, opportunities, information behaviors and information flows in a group of countries that will represent a structured sample of Polynesian, Micronesian and Melanesian cultures, a range of stages of development and forms of governance. Starting with key in-country informants known to the research team in a large number of Pacific countries, and extending that through what we have called the micro, meso, and macro domains, we will conduct individual interviews with community, industry and political leaders across the region, as well as focus group interviews at all levels, including within local communities. Data collection and analysis will be informed by the information ecology framework, leading, we believe, to a culturally responsive, theoretical construct of e-government more relevant to
such communities, and contributing to new forms of e-government theory.

But any such ambitious project must start somewhere, and in the initial phase, before we embark on this series of interviews and focus groups, we have been gathering information from some of our key informants across a smaller sample of Pacific Island countries that represent both Polynesia and Melanesia. Participants working in the government sector in Papua New Guinea, the Solomon Islands, Kiribati and Samoa provided information about actual usage of ICTs within their agencies, databases maintained by their agency, and how core business data is managed within the agency; they also reported on their ICT needs and wants, ICT policy, and the existence of locally initiated ICT projects.

Our colleagues are at various levels in their agencies, and have differing degrees of ICT expertise, and the information they provide reflects this. All have access to basic IT services and Internet connections, in that they were able to email their responses. Many are also participants in various Pacific government/ICT blogs and use informal communication channels such as Linked in and Facebook to communicate with colleagues in their own country and others around the Pacific, commenting on aspects of ICT4D and e-government. (It is notable how few government sponsored discussion forums in the region attract the same degree of comment, or the same lively discussion.) This group clearly do not in any way represent all government workers in the region, and the information they provide to some extent reflects both population size and degree of development in their country, which in itself reflects ICT/e-government readiness and capacity. Thus, from the largest country in our sample, Papua New Guinea, informants report a full range of ICTs available, including access to the Internet, local intranets, secure systems, proprietary software such as Microsoft SQL and ISACA’s COBIT software for IT audit. (This is despite the low ranking of PNG in the UNPAN E-government Development Index.) Databases lie behind some sophisticated web projects such as the Magisterial Service of PNG’s District Court Listings (of cases/defendants) in more than 50 locations.

By contrast smaller countries, especially those from around 100,000 to 500,000 in population, are limited to basic ICTs and using the Internet for ‘research’ news and other information seeking. More developed jurisdictions use proprietary payroll and finance systems, which may function as a whole-of-government system, but even they are generally filing paper-based information or keying it into an online system. Future plans for gathering data online are limited; it is clearly a goal, and will be largely based on handheld devices to collect data, eliminating manual entry, but not dependant on an online user community. This is apart from examples such as PNG’s use of databases for licensing, and inventory, (and court listings as noted above) and Samoa’s use of databases for asset registration, audit, and in the Ministry of Education, school, teacher and student datasets. In addition, we note that proprietary library systems, and student record systems are used by universities in the region.

Applications reported include G2G, G2B, and G2C communications, but this primarily appears to be one-way information. Although local government intranets reported by PNG and Samoa would support G2G data exchange this does not necessarily occur. As networks are developed, better exchange of data between agencies is a goal for many countries in the region. One way which some agencies hope to do this is through digitising policy documents, and reports of NGOs and their own government to make them accessible to a wider audience. The creation of such digital libraries across the region will enhance knowledge dissemination as well as help preserve valued information sources.

Funding for basic ICTs and business systems are supplied by both government and aid agencies (in several cases a number of different agencies were involved with one department), and training in their use comes from both sources. (Training appears to be very system specific, and consultants are generally involved in training when they have a contract to deliver on an aid-supported project.) Individuals with sufficient seniority or working directly in government ICT roles can initiate projects, but some impetus also comes from regional ICT plans and aid agencies. As far as we can ascertain, most countries have some form of national ICT plan, usually under the aegis of a Ministry, ICT department or committee, although such plans may be drawn up by consultants, and some projects appear not to deliver, or are pushed aside when other priorities must take over, or governments change.

The potential of ICTs and e-government for development is well understood; our informants express aspirations for a wide range of e-government applications, including more efficient internal management, e-education (both for the classroom, and for teacher development), e-health, and the creation of agency web sites for better information for citizens. However, one commentator noted that for economic reasons “... most policies in [our country] remain unachievable despite quality strategic thinking,” although he also noted that access to the Internet was changing citizens’ access to information and influencing political events. Another noted that once
systems are introduced, recurrent costs and sustainability are a problem, as they are in other Pacific countries. Another commentator on a local online forum noted that international benchmarking hits SIDs hard, because “they set ideal standards for the roll-out of ICTs and then apply them to large and small states alike—the SIDS will always get a low score.” She asks “how to set appropriate goals for the roll-out of ICTs in [our country]?”

8. Conclusion

Our colleagues in the region are asking the right questions, but their voices are not heard. The picture that emerges is of a disconnect between policies and standards set at the macro level—by the UN and its many agencies, and by aid agencies working through international consultants—and local needs. Policy at the meso level, developed in the many regional forums such as PIFS, CROP and the SPC, is more sensitive to local needs and local culture, but even so, as Sam Taufao [36] notes, change, when it occurs is likely to be at the local level, driven by local IT specialists, and the telecommunications industry. PITA (the Pacific IT Association) and PICISOC (the Pacific Islands Chapter of the Internet Society) he argues, have proved to be the most effective organisations in bringing all the stakeholders together, and contributing to national development objectives [36]. However, as the ICT industry grows, and HR capacity builds in the region, the intractable problems of geography, dispersed rural and island based populations remain. International aid, and advances in technology will undoubtedly address issues of connectivity. But issues of income, language and culture remain. So too does the issue of governance.

E-government transformation at the level of information and services, even interactional services, the so-called emergent and enhanced phases of the 2012 UNPAN E-government Index report represent achievable goals for the urbanised populations of the region. We see these changes already occurring. Extending even this basic level of e-government to dispersed rural populations will require a different approach. The goal of avoiding the risk of increasing the digital divide in the Pacific, of marginalising rural populations even further must drive such developments. But the transformational view of e-government based on a changing relationship of citizens with government, hard enough to achieve in developed countries, will require much deeper knowledge of local cultures, and existing models of governance. What is more, the United Nations’ view that sustainable development is only possible through transformation to a holistic framework of connected government is open to challenge. If ICT/e-government development continues to ignore the local reality, it will simply encourage transfer of power to the “educated and privileged” [27]. We should heed the comment of Imran and Gregor [25] that change will happen only as fast as local leadership and political will allow, and in the Pacific region, these belong to the people.

We must acknowledge also that the Internet itself, access to which is rapidly growing in the region, is an empowering agent, that supports free communication among the community, as we observe in the many lively informal forums, that skirt around formal top down government procedures, and attempts at consultation. The Internet, as one of our informants noted, can influence politics. It may bring greater change and transparency than any UN or regional report, since it operates at the micro level, and involves many of those in the ICT /government sector who are key to any transformation through e-government. Will they focus on improving government information and services, on e-health and e-education, or on changing governance?

So, to return to our research questions, in this ongoing project we are seeking answers on the ground, in local information ecologies, looking for reasons why so many initiatives fail, but also what initiatives are wanted and which might succeed. We will be asking these same communities, which have already expressed their unease about internationally imposed projects, and global comparisons, what is hindering the development of effective policy and implementation? What strategies will support effective policy and implementation? We hope to engage with local culture and governance structures to develop a model which will offer more opportunity for the success of e-government and its potential benefits in the Pacific region.

9. References


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