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Government Data:
Understanding the Barriers to Citizen Access and Use

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Abstract

In almost every country in the world, government remains the single largest repository of data. It stores data on a vast array of topics; data that can be of immense value not just to organisations but also to individual citizens. That value may be economic – helping citizens improve their employment or income-generation potential – or it can be personal/social – helping the citizen to improve their home or community.

Citizen access to government data can therefore be seen as an important component of both economic and social development. Yet that access can be a problematic process. This paper analyses the barriers that need to be understood and addressed if citizen access to government data is to become a more widespread reality. It starts by recognising that, for individuals to access the data that is held about them or other public sector data, two groups of resources must be available: the data itself, and the other resources – particularly technology – to access that data.

Freedom of information legislation is reviewed, but appears to have had a relatively limited effect on citizen access. Finally, a model of both access and use is presented that helps to understand the broad range of factors that affect the interaction between citizens and government data.

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A. DATA AVAILABILITY

A1. Government Viewpoints on Data Availability

Setting aside the issue of hacking and other data theft, a pre-requisite for citizen access to government data is that the government first makes that data available to citizens. On this, different governments have taken different views, some of which create access barriers. These views can be represented as lying anywhere within a triangle between three extremes, summarised in Figure 1.

Figure 1: Government Viewpoints on Public Sector Data

Data is a private
asset

Data is a public
asset

Data is not an
asset
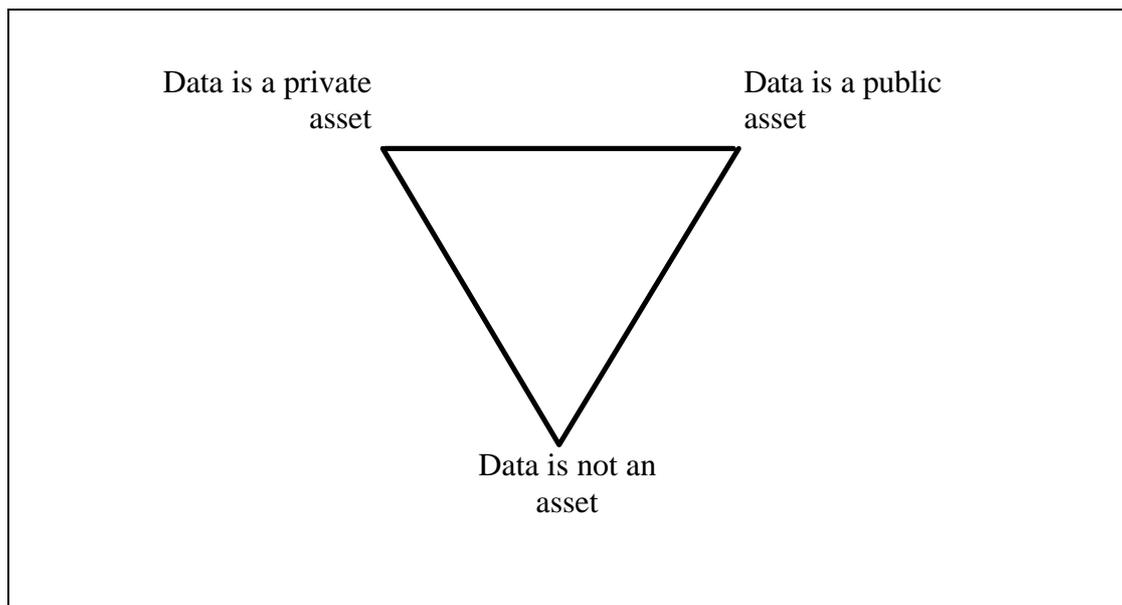
- *Data is a public asset.* Public sector data is seen as owned by everyone since it has been gathered about and from everyone, often compulsorily. The view here is that data should, in general, be made freely available as it can assist both social and economic development. At most, a charge should be levied that merely reflects the cost of output and transmission. Citizens have a right to see the data held about them and other public sector data, with certain exceptions.

- *Data is a private asset.* Public sector data is seen as owned by the department which owns the computer on which that data resides. The view here is that the public sector has invested money in producing data which often has considerable commercial value. Data should therefore be sold at the highest possible price to earn valuable revenue for the public sector. Citizens may see the data about themselves and some other items of data so long as they pay.

- *Data is not an asset.* Data is not seen as important enough to warrant open consideration of issues of ownership, value and charging. Where used, data is virtually a personal asset of particular public sector staff. Data is not generally made available and citizens do not have rights of access, except perhaps through 'under the counter' payments.

Different governments take different viewpoints. At the federal level, the US government thinks 'public asset'. There is no copyright on federal government data and, by law, that data must be made accessible for the marginal cost of distribution. A recent global survey indicated that more than three-quarters of national governments followed this view, at least for online data (Zammit 2000).

By contrast, a number of US states think 'private asset'. So, too, does the UK central government with guidelines 'encouraging agencies to maximise income by charging what the market will bear' (POST 1998:32). Others favour a mixed approach. The European Commission takes the line that:

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"Pricing policies may vary depending on the nature of the
information.  A price should be established which
reflects the costs of preparing and passing it on to the
private sector, but which does not necessarily include
the full cost of routine administration.  The price may
be reduced if provision of the resulting information
service is deemed to be necessary in the public
interest." (EC 1998:13)
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These different views will present differing hurdles to accessibility: very low barriers under a 'public asset' regime; much higher barriers under a 'private asset' regime. Growth of the Internet and its 'data must be free' philosophy may favour the 'public asset' view. It certainly leads to the absurd situation in which the UK government tries

to sell internationally-shared data, such as that from observation satellites, for hundreds of dollars per item when that same data can be downloaded free of charge from US agency Web sites. As well as these practical grounds, the 'private asset' view is also being questioned from the perspective of national interest: "You get a few pennies in, but how much do you lose in potential gains in society by not allowing information to be passed on more cheaply?" (Pietarinen 1996).

A2. Making Data Available Electronically

Further barriers may exist to making data available *electronically*. In the UK, for instance:

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• "Many of the operations of government are still paper
  based. …
• Even where information is stored electronically, there
  may be a need to collate and process data manually
  (e.g. because of lack of interoperability between
  different data systems). …
• There is no mandate or framework to make data
  available electronically: many officials may be
  unaware of this option, leaving electronic publishing
  as a secondary activity of IT or other personnel
  rather than a primary component of a department's
  communications philosophy." (POST 1998:32)
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Failure to properly control electronic data in government can equally lead to a backlash against availability. In 1999, for example, the Pentagon closed down many of its .mil Web sites having discovered those sites had made electronically available:
"a treasure trove of information, including the maintenance status of fighter aircraft engines, air refueling schedules, an Air Force 'how-to' manual for determining targets to attack, and army manuals on small unit tactics and the use of many weapons. … The director of the Defense Intelligence Agency claimed threats to security no longer come from spies and moles but from simply releasing too much information." (Campbell 1999:3). Whether misguided or realistic, any backlash may mean that 'the golden age of public access to government information on the Internet is over.'

B. TECHNOLOGY AND OTHER ACCESS RESOURCES

If citizens can overcome the first hurdle – of having government data made available – they must then have the resources necessary to access that data. Some important access resources are rarely discussed. They include:

- *Money/time*: it costs money and time to access government data. Whilst people tend to have increasing amounts of the former, they have decreasing amounts of the latter.

- *Knowledge*: citizens can only access available data if they know the data exists, that it is available, and how it can be accessed. It would be fair to say that the vast majority of citizens in all countries do not possess this knowledge in relation to all public sector data. Vast swathes of government data remain untapped by huge numbers of citizens simply because they have no idea that it is there or how to get hold of it.

- *Motivation*: citizens must want to access public sector data. Public servants often assume a great thirst for government data exists among the general public, and they suppose that, if only those citizens were given access, they would drink down data by the gallon. In practice, many public information systems are marked less by the enthusiasm of a minority of citizens than by the apathy and disinterest of the majority. Most citizens of Western nations hardly care what government is doing. Presented with the Internet, they will follow their main interests of sex, shopping and entertainment rather than details of the latest local government enterprise zone scheme.

The most-discussed aspect of data accessibility is information technology (IT). Why? Because, unlike the other resources, it is sexy and tangible. However, IT is very much a two-edged sword as regards access to government data. On the one hand it reduces barriers. Compare downloading a government report via the Internet with going out to buy a paper version. IT has made it far cheaper, quicker and easier to access that data. A wealth of data that, because of the barriers, was essentially inaccessible in

paper form becomes accessible when it turns digital. Citizens can also re-use the data more easily because it arrives in electronic form. And a good search engine will reduce knowledge barriers though, as noted, motivational barriers are unlikely to be affected.

B1. Access and the Digital Divide

The foregoing represents the technological 'good news'. On the downside, IT raises barriers and has created a *digital divide* across which one group reaps the benefits of IT-enabled accessibility and one group cannot. The skills required for accessing manually-held information are little more than literacy. For IT-based data, computer literacy must also be added and not everyone has those skills. Just as important are the issues of cost and ownership. Accessing individual items may be cheaper with IT, but to get that far you need an IT infrastructure in place first – a computer, a network connection, software, and so on. That all costs money whereas, by comparison, actually reading paper-based materials costs nothing.

Because of those costs, there is a very uneven profile of those who own and use IT: the rich not the poor; the graduate not the school leaver; the ethnic majority not the ethnic minority; the urban not the rural citizen; the young not the old; men not women. In the mid-1990s, for example, of more than 100,000 daily recipients of White House electronic documents, 85% were under 50, 80% were male, and 50% had a postgraduate qualification (*Infosys* 1994).

Since that time, general access levels have increased markedly. Several US cities recorded more than half of all adults having access to the Web by the end of 1999 (*Government Technology* 1999). Within this overall increase, the number of women, seniors, ethnic minority members, etc. has also increased. This is all to be expected. The penetration curves for IT are following very similar – possibly faster and steeper – patterns to those carved out by earlier technologies like the telephone and television.

However, whilst absolute numbers of previously-excluded groups are rising, inequalities persist and one must constantly push behind the averages to find the

realities of access. 125 years after the invention of the telephone, half the world's population has yet to make a phone call. Even in Western nations, one-quarter of the poorest 20% of households does not have a phone (Taylor & Webster 1996).

Access gaps hold equally for the Internet. The digital divide still runs nationally. In the US, for example (NTIA 1999):

- High-income urban households are 20 times more likely to have home Internet access than low-income rural households.
- Low-income white families are three times more likely to have home Internet access than equivalent black families; four times more likely than equivalent Hispanic families.
- Those without disabilities are three times more likely to have home Internet access than those with disabilities.

And the digital divide still runs internationally – there are more Internet account holders in London than in the whole of Africa, and many of the latter are rich, white, urban South Africans (Heeks 1999a).

Of course, one must equally take care with even these figures. Poor households and poor communities often share technologies in a way that richer ones do not. In Africa, for example, Western models of one email/Internet account serving one individual do not hold. Instead, the typical account owner is an intermediary who shares access with an estimated five to ten others through networks of family, friends or colleagues (Heeks 1999b). However, whilst moderating the impact of inequality, these modes of operation do not remove an inequality that sees the majority of the world's population cut off from computers and the Internet. If 200 million people worldwide used the Internet in 2000, that leaves 5,800 million – more than 96% of the world's population – who did not.

B2. Addressing the Digital Divide

Governments are generally well aware of the dangers of IT strengthening the 'social exclusion' that prevents some citizen groups from fulfilling their economic and social potential. A variety of initiatives are therefore in place that try to overcome the ownership and use inequalities described above. These aim not just to increase access to government data but also to bring other perceived benefits of access to IT: access to IT-related skills, access to employment information, access to lower-cost online shopping, etc.

Some initiatives have focused on *increasing ownership*. For example, in 1997, the Israeli government set up a five-year social inclusion fund of c. US$50m which is purchasing home PCs for an estimated 30,000 poor families (Raab 1997). Other governments have used tax breaks or subsidies as ways to try to increase the numbers of those who actually own IT.

Ownership initiatives can only go so far and, for many, the costs of personal ownership will remain prohibitive. For these groups, governments may set up initiatives focused on *increasing access* to IT that is government- or community-owned IT. Such IT may be placed in a variety of locations:
- Public spaces, such as common areas within shopping malls.
- Semi-public spaces, such as libraries or sport facilities.
- Dedicated spaces, such as community telecentres housing a room-full of Internet-linked PCs.

Such placement of IT only addresses technology barriers, not skill barriers. For some, the skill barriers mean they require the assistance of an *IT intermediary* through whom the citizen indirectly accesses the new IT infrastructure, including electronic public data. Alternatively, they may require an *IT facilitator* who will train them or help them to gain access themselves. These roles may be informal, such as the public librarian who takes time to assist clients, or they may be formal, such as the telecentre worker whose job it is to bring community members online.

Despite all these measures, however, IT inequalities do and will remain. The watchword for government must therefore be 'supplement' not 'supplant'. Provision of public sector data and other services electronically should be seen as an additional weapon in the armoury that sits alongside paper-based or face-to-face methods. It should not be seen as way of replacing those more traditional methods. Unfortunately, cost-cutting pressures in government mean such principles can easily forgotten. As so often with technological change, it will then be the poor and disadvantaged who find they have gained last and gained least from the new technology.

C. FREEDOM OF INFORMATION LEGISLATION

Recognising some (though not all) of the barriers identified above, and in a bid to ensure access to data across the public sector (and beyond) some governments have introduced *freedom of information* (FOI) legislation. In the US, for example the Freedom of Information Act was introduced in 1966, amended in 1996 by the Electronic Freedom of Information Act, which guarantees public access to most federal government data electronically. These Acts – at least in theory – enshrine the 'public asset' viewpoint in law and have resulted in about 400,000 requests for access per year. To help with this access, government information locator services have been set up that identify, describe and assure access to such data.

The particular content of FOI legislation varies from country to country. In Ireland, for example:

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"The Freedom of Information Act, 1997, was the first
significant piece of legislation that obliged government
Departments and Offices to publish details of their
information holdings.  This Act asserts the right of
members of the public to obtain access to official
information to the greatest extent possible consistent
with the public interest and the right to privacy.
Under the Act, public bodies are required to make public
certain information about themselves and also to make
available details of their internal rules, procedures,
interpretations, etc. used in decision making.  Many
Departments and Offices publish this information on the
Internet.  The central purpose of this information is to
assist the public in ascertaining the information held by
each organisation and how to access it.
In respect of non-personal information, fees may be
charged in respect of the time spent in efficiently
locating and retrieving records, based on a standard
hourly rate. Photocopying charges may also apply.  In
respect of personal records, copying charges only will
apply, save where a large number of records are involved.
No charges may apply in respect of the time spent by
public bodies in considering requests." (EC 1998:22)
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Some countries go further. Those in Scandinavia provide a public right of access to all documents kept by a public authority, including electronic documents.

However, this positive picture of facilitated access for citizens is not widely found. Only just over a quarter of governments worldwide have freedom of information

legislation (Zammit 2000) and in many cases it is hedged with exemptions which may
include:

- "exemptions in the interest of the state, for example relating to national security, public order, economic interests, international relations, legislative procedures, etc. …
- exemptions in the interest of third parties, for example relating to privacy, intellectual property, commercial secrets, judicial procedures, etc.
- exemptions to protect the decision making process, for example preliminary or 'internal use' of information, etc.
- exemptions to avoid unreasonable costs or workload in the administrations concerned, for example information already published or excessive requests." (EC 1998:12)

The growing pattern of exemptions has been seen in the US. A door that was opened
by the 1966 legislation and its 1974 amendment has been constantly nudged closed by
subsequent legislation and court decisions. These moves have mainly involved greater
protection for law enforcement agency records and for personal privacy at the expense
of openness (Hammitt 2000).

The overall impact of FOI for citizens seems limited:

> "FOI is used mainly by business to obtain commercial information in Canada and the United States. In Norway and Denmark, it is used mainly by the press. … In general, FOI does not appear to have been a very potent instrument in the hands of the public to promote greater transparency and participation. Indirectly, however, the threat of its use appears to have caused some greater degree of disclosure, though it has also led to greater use of oral discussion and decision-making, and in some cases the actual alteration or destruction of documents." (OECD 1998:42)

Thus, whilst legislation is a positive move in theory; in practice, it has not yet fulfilled
its potential.

D. CONCLUSIONS: UNDERSTANDING ACCESS AND USE

Citizen access to government data is recognised to bring both economic and social benefits. Yet there are many roadblocks along the path to access. The very first requirement – availability of government data – can be problematic. Governments face the tension of new public management, torn between the public service ethos of providing data for free, and the neo-liberal ethos of charging what the market will bear. The former does not always win out. Nor, despite all the talk of 'eGovernment' have public sector procedures yet caught up with the potential for electronic data provision.

In relation to access, a number of barriers exist. Freedom of Information legislation has attempted to bring down some legislative barriers, but the self-preserving, sometimes self-serving instincts of governments have neutered many such initiatives. Governments have been rather better at recognising technological access barriers, but the scale of the task means current projects are but drops in the ocean. And governments have been poor at recognising some of the less tangible access barriers, such as knowledge and motivation.

They seem to have been worse still at recognising that even if all the access barriers identified above could be overcome, they represent only the first step in the process since they merely present the data to the citizen. Many other resources are needed if that data is to be turned into information and if that information is then to be applied for citizen learning, decisions and actions:

- *Data into information*. Data remains data unless citizens have the skills and expertise to turn it into information. In particular, they need the knowledge: to assess whether the data is truth or lies, of value or not; and to apply that data by adapting it to their particular needs and circumstances. Many disadvantaged citizen groups lack such knowledge.
- *Information into action*. Information about new government tax rules is of no value if you cannot afford to pay tax. Information about a government decision that

may damage your community is of no value if you lack the money, time, motivation or power to challenge that decision. Information about new employment opportunities is of no value if you lack the skills or knowledge to take up those opportunities. Barriers to resources for action therefore constrain citizens even if they can access information.

A model is therefore needed, as shown in Figure 2, that takes understanding beyond just access issues to the whole chain of steps that turn government data into citizen action.

Figure 2: The Information Chain

Data → [Access] → [Assess] → [Apply (Adapt)] → Information → [Act]
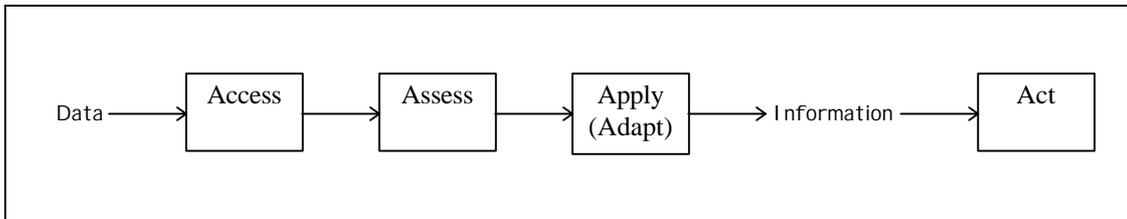
The model is a reminder of the steps and barriers that citizens face in making use of government data. It is also a reminder that disadvantaged citizens will remain disadvantaged because of inequalities in a broad range of resource endowments – knowledge, skills, money, power and others – regardless of whether they can access data using IT. At best, then, access to data and access to IT might be necessary but they far from sufficient conditions to enable effective citizen use of government data.

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