Iceland's national information infrastructure

This article discusses Iceland's national information infrastructure in the year 2000. It focuses on the current information policy and legislation of that country. It looks at the policy as it is presented in government publications from the last 5 years and evaluates its effects, with particular regards to the education, culture and health sector. It describes the foundation of a nationwide health database in Iceland, which was established by an Act of Parliament taking force on 1 January 1999. The idea for this database came from deCODE, a company that proposes to make use of the homogeneity and the vast genealogical information of the Icelandic nation to develop better drugs for common diseases. The company is a genomics research company, and is currently working with Hoffmann La-Roche. It has gained a 12-year monopoly on building such a database. The formation of which brings up many ethical questions, and also new possibilities for health management.

Introduction

Most of the Icelandic information infrastructure lies within the public sector and is subject to government information policy. This policy covers nearly all of the health sector along with education, official administration as well as a large chunk of agriculture and industrial production. I have therefore chosen to investigate the Icelandic government policy in these matters. Everyone must operate within the legal framework, and therefore it is obviously also of interest in this context.

The study of information policy is a relatively recent part of information science. The boundaries are not always clear and there is still some dispute over what exactly it is, where it begins and where it ends. The ambiguity of the word “policy” has meant that most of the writers on the subject have had at least a different definition, if not exactly a different view. “In turn, policy is generally taken to imply purposeful action directed towards a set of identifiable goals; and policy research as the analysis of these actions by objective scientific criteria.” That said, I will endeavour to describe and critically analyse the national information infrastructure (NII) of a small European nation, focusing on the legislature concerning information and the relevant government policy.

It is easier to define what legislation is than what policy is. But a question arises: which legislation has to do with information, and which has not? In a wide sense, almost all legislation concerns information. When we explain statutory terms, we can employ different interpretation of the text in question, such as a literal, a broad or a narrow interpretation. These are established methods used in interpreting legal and other texts, and used in the legal profession for dissemination of statutory and other texts. A narrow interpretation will be used here. The narrow interpretation in this case means either statutes that use the word information or related words, or obviously effect the information sector will be scrutinised.
Literature

Halvor Kongshavn compiled an overview of Icelandic legal bibliography in his article *Sources of Legal Information in Iceland*.ii Erla K. Jonasdottir touched on the 1976 Public Libraries' Act in an article on library service for children, that appeared in 1983 iii and Kristin H. Petursdottir discussed the same Act in an article in 1983.iv She wrote in depth on Acts concerning libraries in Iceland in 1984.v This is the main article on Icelandic information policy before 1990. Stefania Juliusdottir discussed information policy in an article on libraries in Iceland in 1995.vi Einar Sigurdsson wrote in depth on the recent National Library Act in 1996.vii The author has written two articles on Icelandic information policy in *Scandinavian Public Library Quarterly* in 1998 and 1999.viii

The articles in English up to 1984 do not reflect the current situation, but are valuable historic sources. Of the recent articles, Juliusdottir and Sigurdsson write in Icelandic. Juliusdottir gives a good overview on the current situation in library services, and Sigurdsson describes the draft to a Bill on the National Library from its formation to a National Library Act. The author's articles cover the same field as is discussed here.

The Icelandic Law Collection (*Lagasaðn*) can be found on the Althingi Web, as well as the Althingi Journal, which covers all work done by Althingi, the national parliament.

The legal environment

The only clear boundaries as I start out are the geographical and jurisdictional ones. The scene is Iceland, an island in the North Atlantic, 500 miles northwest from Britain, slightly larger in area than Ireland but holding only 275,000 people. Its culture is North European. It is generally agreed that the nation shows slightly more individualistic traits than its closest relatives in Scandinavia but the social structure resembles that of its Scandinavian neighbours.

Iceland has decided to stay out of the European Union for the time being. In 1992 Iceland, along with Norway and Liechtenstein, formed the European Economic Area (EEA) with the European Union. By this agreement, the three countries will adopt the so-called "four freedoms" of the EU and are open to other co-operation with the EU. This means that these countries will adhere to the main rules of the four freedoms concerning free interchange of goods, people, capital and services.

The EEA maintains its own court and surveillance authorities. The surveillance authorities' role is to investigate and monitor how the countries adhere to the agreement, whereas the court rules in cases concerning the agreement, brought by participating countries, EEA surveillance authorities or individuals. Apart from this agreement, Iceland is bound by other international agreements it has signed concerning information, such as the Berne convention. Inside of the boundaries formed by such agreements, it forms its own policy.

Personal privacy and data protection

The Registration and Treatment of Personal Information Act became law in 1989 and deals with systematic registration of personal information. This Act decrees the
general rules for personal privacy, and Acts for specific fields of registration of personal information supersede it, e.g. the Health Database Act. Research in genealogy is also specified as exempted from the rules of this Act. Under the Act it is illegal to register information on colour, creed, political views or religious belief, unless the person involved has given the information or given consent. The same applies to criminal records, information on sexual behavior, health, drug use or social problems. This can, however, apart from being decreed in special legislation, be allowed in specific cases by applying to the public watchdog, Tolvunefnd (literally: Computer Committee) or Database Committee. This public watchdog plays a big part in the Health management database, which is the subject of the later part of this paper. Also, it must be obvious to people that the information is being registered. It is not allowed to run two databases from different sources. Individuals have access to any such data without due delay, or where appropriate have such data corrected or erased. Financial data can only be registered by institutions and companies that have special permissions. This information shall be given to the individual in question upon request within two weeks.

Individuals that wish to be taken off public lists that are used for national market surveys or general questionnaires need only call the National Statistical Bureau. If an individual is a subject of a list formed in any other way he/she can demand to be taken off that list. Companies and institutions that distribute material with these kind of lists have to apply to the public watchdog, Tolvunefnd. Finally, it is illegal to systematically collect personal data in Iceland to be used abroad, unless with a permission from Tolvunefnd.

The general rules in this Act do not differ very much from current European ones, e.g. the UK one. There is now a Bill for a Personal Data Act before parliament to bring the legislation in harmony with DIRECTIVE 95/46/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of October 24 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data. This Bill will probably become law before May 2000.

Public access to government files

Both the 1993 Public Administration Act and the Information Act that was passed in 1996 allow for public access to official documents. As a result of this legislation, this access was increased, and the rules that govern that access were made both clear and public. The latter Act was probably the greatest difference from older legislation, and the administration was made more open as a result of both these Acts.

The Public Administration Act was legal confirmation of administrative use that had been in force for some time in 1993. This Act applies to both national and local government, but only to the executive part.

Administration in Iceland is closed compared to that of Sweden and Norway, but resembles most closely the one in Denmark. Indeed the administration was Danish well into this century, and the ties were only fully severed in 1940. As a result, some public services have not fully fathomed the current view and stipulations, and are slow to release information, especially to the media.

A beneficial result of the Information Act is an increasing emphasis on better archiving methods, both for public institutions and private companies.

The Information Act was passed in 1996. It applies to a wider range than the Public Administration Act does, in that it also takes to non-governmental bodies.
Whereas the Public Administration Act had stipulated the right of the public in dealing with the executive, the Information Act dealt with access rights to government files. The main rule is that files are only accessible to parties to a case, and then only when they ask for it. Certain exceptions are made to the main rule, such as in the case of school grades.

**Government Information Policy**

The current government, headed by David Oddsson, took power in May 1995 and was reelected in 1999. The first indication of its information policy appeared in the government manifesto at the inauguration. These points were mainly broad aims for modern information technology to be used for economic progress, as well as progress in science, research, arts and culture. Rules were to be made to ensure information flow from the authorities to the public.

**Ministry of Finance**

The first ministry in this government to publish an information policy was the Ministry of Finance. It appeared in a paper published in December 1995 written by a special consulting committee (RUT). The main objective of the government information policy, according to this paper, is that Icelanders be among the leading nations in the information age, both as producers and consumers of information.

The Ministry of Finance has a large stake in consumption of information technology as the funding body for the state sector, which is probably why the Ministry decided to publish its own information policy. It also has a role as a public watchdog in new technologies, and monitored the effects of the Y2K bug in 1999-2000.

**Ministry of Industry and Commerce**

At a meeting on 9 October 1995 the government decided to delegate to the Ministry of Industry and Commerce the drafting of a governmental policy in information technology for the next ten years. This policy appeared in a paper published in October 1996, *The Icelandic government's vision of the information society*, published both in Icelandic and English.

The chief objective of the information policy expressed in this paper is that Iceland shall be in the forefront of the world's nations in the utilisation of information technology in the service of improved human existence and increased prosperity.

This was backed up by five further objectives: that Icelanders shall have easy access to the information future; that complete equality shall be ensured between the public and private sectors in the field of information technology and information industry; that information and telecommunications technologies shall be mobilised to improve the competitiveness of the Icelandic economy, increase productivity and proliferate the possibilities of exporting Icelandic inventiveness; that the educational system should adapt to changed social dynamics and focus education upon the advantages of the information society while at the same time keep watch over the Icelandic language and culture; that legislation, rules and working methods shall be reexamined to stimulate technological progress and to protect the rights of individuals and companies.
Ministry of Transport and Communication

The Ministry of Transport and Communication drafted a Communications Bill that became an Act in December 1999, no. 107/1999. One article in it stated that if a telephone conversation were to be recorded, consent would have to be sought first. This is in harmony with regulation 95/46/EU and 97/66/EU, which stipulate that the main rule is that data on any individual shall be made only with the individual's consent. This Act met with some criticism from people that thought it would make impossible tracing threatening or obscene calls.

Ministry of Culture and Education

In March 1996 the Ministry of Culture and Education published a paper on the ministry's information policy in the years 1996-1999. Three consulting committees formed this policy. One was in the field of culture, one in the field of education and one discussed the ministry's own structure. The objectives outlined in this paper were not formed as visions for these years, but in detailed project outline. These projects included a push for computerisation in public libraries, that was incorporated in the Public Libraries' Act of 1996. In March, 1998, the ministry started its computer education programme for teachers in co-operation with the Teachers' University in Reykjavik. Chapter IV of this paper discusses cultural matters. There, professional librarians are said to have valuable knowledge in the field of organising and finding information, which is important in the information society.

Objectives in this field are that public libraries ensure public access to computers and digital information, to the Cultural Net (a project proposed in the same chapter) and other information on the Internet, as well as multimedia. Good access for the handicapped to public libraries has to be ensured. To fulfil these objectives, public libraries' staff have to have the knowledge to assist the public in information seeking and other uses of information technology. Continuing education for professional librarians to make them more proficient in information technology is considered vital.

When the government published its papers on the information technology, the National and University Library had opened in its new building, and was technologically very well equipped. According to the National and University Library Act and the Public Libraries' Act, this library was to assume a leading and helping role for the public libraries in the country, but its name was not in the government policy papers mentioned here.

The legislation that concerns information policies overseen by the Ministry of Culture and Education is the Copyright Act, the Public Libraries' Act, Acts on elementary and secondary education and the National Library Act.

Copyright Act

The Icelandic Copyright Act dates mainly from 1972. It has since been amended three times, last time in 1996, when new rules in compliance with the EEA agreement were implemented. These rules are in harmony with current EU legislation on copyright.
In connection with this latest amendment to the Act, the Authors' Library Fund Act was passed in 1997 to decree pay methods to copyright holders for library loans. This was decreed before in the Public Libraries' Act. The main change is that whereas only fiction writers were paid for library use before, now all authors receive payments from this fund.

**Public libraries**

The current Public Libraries' Act dates from 1996. It bore no great changes from the Act of 1976. Public libraries were by then wholly funded by local government. At that time, there were over 200 communities, sveitarfelog, in Iceland and one of them was Reykjavik with 40% of the 220,000 inhabitants. In 1995, fewer than 30 public libraries were open for more than 20 hours a week, and obviously, communities with less than 100 people do not have any possibilities for a strong library service. In 1992, the government decided that local government should take more responsibilities in the future. The largest of these responsibilities is elementary schools, which were taken on by the communities in 1996. Very small communities now have no choice but to merge with larger ones. Every year, because of this and other factors, communities are merging. When they will number between 40 and 60 and most of them will have more than 2000 inhabitants, most public libraries will be capable of at least 20 servicing hours a week.

A temporary clause in the 1996 Act provides for a funding of ISK 4.000.000 (around $60,000) a year for the next 5 years for libraries. This funding is to further IT in the libraries and speed the connection of these libraries to a nationwide datanet. We should be reminded here of the small absolute numbers of the population.

**The National and University Library**

An Act was passed in 1994 on the National and University Library, in which the former National library and University of Iceland Library were merged, and housed in the current library building, which opened 1 December 1994. The library is by far the largest in Iceland, now holding around 730,000 books, or close to 3 books for every Icelandic. It has assumed a leading role among Icelandic libraries because of its size and position. Article 11 in the Public Libraries' Act stipulates that the National and University Library shall coordinate work in Icelandic libraries, give them professional advice, and cooperate with them, as further stipulated in laws and regulations.

**Elementary and secondary schools**

As mentioned before, elementary schools, in Iceland for children aged 6-15 years, are now run by the communities since August 1996. They are to be roomier than before, since several schools have had to accommodate two classes every day, but the objective is that all schools should be able to room all classes at once, and school hours should be mainly between 8 and 15. In Iceland, elementary schools have traditionally been micromanaged by statute. School libraries have very much the same position as they had before. The stipulation that they may be merged with the local public library is clearer than before, and is more likely to be of importance, now that these two institutions are run by the same authorities. The current Elementary School
Act was passed in 1995 and the current Secondary School Act was passed in 1996. The main change from the former Acts on school libraries is probably the emphasis on the use of information technology.

**Reaction to this policy**

There has been little reaction to the policy implemented by the Ministry of Culture and Education. Teachers and librarians seem to be waiting for the authorities to take every new step, and have not shown themselves to be innovators in these new fields. One exception to this rule was the formation of the Icelandic Education Net (Islenska menntanetid), instigated by Petur Thorsteinsson, a headmaster in a small village in North Iceland.

The Ministry set up a committee in 1998 to give advice on database access on a national basis. The committee published its results in April 1999, a month before a general election in the country. It contained a plan for database access for the scientific community, for the education system and for the nation as a whole. Incidentally, the minister took to heart one of its recommendations, and an agreement was reached by the publishers of the Encyclopaedia Britannica and the ministry for access for the whole nation. This was the first time a general access to the Encyclopaedia had been given to a whole nation. This agreement was announced shortly before the general election, and might even have helped the ruling government, which was returned with a sound majority. The general national access to the Encyclopaedia has proved popular since.

Iceland has a policy to maintain its own language. This has proved expensive, but is thought to be one of the mainstays of an independent nation. As a part of that policy, the ministry secured an agreement with Microsoft to translate Windows into Icelandic. The agreement also called for steps to be taken to protect software copyright better than before. Icelandic is the 31st language to have a Windows translation.

**Ministry of Health and genetic information in Iceland**

On the last day of 1995 deCODE, a new Icelandic genomics company was established. This news was then thought to hail a new era in Iceland. The company had by November 1996 secured 12 million dollars from American investors and started operations. It proposed to make use of the Icelandic gene pool, which is optimal for the company in two aspects. First, the Icelandic nation lived, more or less, in a not too splendid isolation in the 1000 years following the settling of the country between 870 and 930. This means that the nation is genetically very homogeneous. Second, interest for genealogy has been great in Iceland, perhaps a result of the isolation and other factors. This means that genealogical records are more or less complete for the last 300 years, and can be easily followed for another 400 years back from that.

The company started out with 24 employees, which in itself is considered news in Iceland, where the total work force was then around 150,000. The CEO, Kari Stefansson, claimed at that time that deCODE would need a contract with one drug company to be able to enlarge the work force into 100 a year from then. This fell through. In November 1997 deCODE's employees were 90. In February 1998,
deCODE signed a contract with Hoffmann La-Roche, worth 200 million dollars. Now, deCODE is planning to employ around 400 people in 2003.\textsuperscript{xi}

As stated on deCODE's Web page, the objectives of the contract are to discover genes with alleles or mutations that predispose people to the development of up to twelve common diseases, including four cardiovascular diseases, four psychiatric/neurologic diseases, and four metabolic diseases. deCODE is founded on the assumption that the scarce resource in human genetics is one that can yield the genetics of common diseases. It compares the DNA of healthy and diseased groups to identify the differences between them and elucidate the gene or set of genes responsible for a specific disease.\textsuperscript{xii}

To be able to fulfil its objectives, deCODE will need more than just the two reasons stated before. It will also need a powerful nationwide database, covering Icelanders both living and deceased. To make this database into what it needs to be, two things are needed. deCODE has already acquired much of the first one. In cooperation with Frisk International, it is building a first-class genealogical database, which now includes around 620,000 names, around 90\% of all Icelanders that have lived in the last 7 centuries. For years this database was maintained as a hobby by Fridrik Skulason, the CEO of Frisk International, but with the agreement, it is now a project with 15 people working on it.\textsuperscript{xiii} Frisk International and deCODE have recently decided to publish the database as it is on the Web for free use.\textsuperscript{xiv}

The other thing needed is a database that includes medical information on all Icelanders. The provision of such was the essence of a proposal for a legislation made by the Ministry of Health in March 1998. This proposal was not fully discussed in the Parliament session that closed in May 1998, and was taken up in the following session in October, and passed as an Act on December 17, 1998. It allowed the Minister of Health to sign a contract with a company or institution with regards to the running of a medical information database, meeting certain preconditions that I will describe later in the article. Although the proposal could theoretically attain to any company or institution that would be set up with this objective, in fact related only to deCODE, as later turned out. This legislation means that deCODE will have a virtual monopoly on building this sort of a database, and keep it for the next twelve years.

The monopoly is considered vital, so that deCODE or any other company would find it feasible to build and run such a database. For the sake of scientific equality and innovation, the database owner can oblige itself to give scientists from other institutions access for their research. The database will be a general health database, and not just a genomics database, for added use both for deCODE and the health authorities.

The Ministry of Health published their information policy in October 1997. It consists mostly of general statements on the utilisation of modern medical technology. The Ministry states that when new technology is implemented, personal privacy shall be protected. Iceland has signed agreements to this point, and is bound by the European Commission's Recommendation R(96) of the Committee of Ministers to State Members on the Protection of Medical Data (and Genetic Data), as well as the European Commission's Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, no 108, 1981.\textsuperscript{xxv}

The proposal for the genetic database Act met with criticism from many sides, not least from some doctors, who felt threatened because their monopoly of medical information would be broken. The discussion tended to centre on the possibility of connecting the medical information to individual names and on the further
possibilities of the illegal hacking into the database. Iceland's administration is derived from Danish administration, which has tended to be more secretive than the Sweden and Norway. This means that the legislation tries to do away with any possibility that genetic and medical information kept by deCODE may be connected to individuals.

Nevertheless, this led to a tug-of-war between deCODE and Tolvunefnd, the government database watchdog. The Tolvunefnd has in cooperation with deCODE tried to build a system, whereby deCODE only has access to the information it works with through an independent medium, although this of course begs the question how independent this medium can be. In the beginning of June 1998, the Database Committee closed down deCODE's Clinical Research Service Centre, its information retrieval office, since it stated that it was operated by people that were also working in the genomics laboratory in another part of town. The employees were also found to be ignorant of agreements between the Database Committee and deCODE. The media stated too at the time that the people in charge of the information retrieval office did not carry a degree in medical sciences. This is wrong; the people working there all carry a medical degree, and do get paid by deCODE, but do not work in the main laboratory.

The information retrieval office is a project based on a contract between 70 doctors and deCODE. It is an independent company. The Database Committee has laid down the lines for this cooperation pretty much like the proposal for the legislation, and the areas of dispute are among those stipulated in this proposal. The party that builds and runs the database has to meet these preconditions, according to the Act:

- The institution / company has to be Icelandic. deCODE went public on the Icelandic stock market in 1998, but has an American mother-company, which was necessary for the initial funding.
- The database is to be stationed in Iceland. deCODE’s genomics laboratory is now in an eastern suburb of Reykjavik.
- That a description of technical, organisational and safety measures which is satisfactory to the Database Committee be provided. This has not been argued about, and seems to be in harmony now.
- That the database be run by people with a degree in medical science. The CEO, Kari Stefansson is a doctor of medicine, and deCODE has employed people with medical degrees, as well as people with degrees in biology and other sciences.
- That the running of the database be kept separated from other parts of the institution / company. The main debating point seems to have been exactly how this is to be brought about.

A week after deCODE’s information retrieval office was shut down by the Database Committee, it was opened again with supervisors from the Committee working there. They and the people working beneath them are getting paid by deCODE, but in name, it is an independent company. This arrangement is a vital for the information process.

My question is; Why is it taken for granted that people working for the State are more apt at keeping information than people from a private company? Numerous incidents of information leakages from State sources in Iceland point to the use of information leakage as a tool in administrative disputes, mainly by elected officials.

As said before, discussion on these matters has been lively in Iceland. A lot of people had not grasped the concept for deCODE completely, and so were stunned by the legislation proposal. A lot of the discussion was centred on the possibility of
break-ins to the database. Some were concerned with the possibility of foreign drugs companies using the database for direct marketing, or other companies using information from the database for murkier objectives. This discussion was mainly based on ignorance of the matter and has mostly ceased in Iceland, but is gathering strength abroad.

A stronger opposition came from the fact that deCODE will get a 12-year monopoly on this database, which covers the whole nation, and so will have a pool of information hitherto unknown in Iceland. This offers all kinds of opportunities for misconduct, say the people who are opposed. These arguments do not seem very fundamental to anybody who has worked within these professions, but have to answered all the same. The company will have to convince the population that their work is indeed beneficial to the nation. The company seems quite aware of this. It should be obvious that research on genetical diseases will probably first benefit those who carry the diseases and are the subjects of the research. deCODE has done research on MS (Multiple Sclerosis), which Kari Stefansson had researched during his stay in America, where he worked for over twenty years. MS-patients in Iceland are one group that hope to reap benefits from deCODE’s research and give it their full support. Hoffmann La-Roche is also aware of the need for good relations with the study group (the Icelandic nation, living and deceased). It promises to give to the nation, at no charge, all the medication that will be developed on the basis of the discoveries resulting from the collaboration between them and deCODE.

Not all doctors in Iceland were as predisposed as the MS-patients. Some of them opposed the legislation proposal on the grounds that it would give deCODE monopoly of research. deCODE has obliged itself to give access to the database for scientific research, but the legislation proposal does not oblige it to do this, and forbids its use abroad. As said before, some 70 doctors are now working with deCODE. Many doctors who wrote on the issue in newspapers stated that a database such as this one brought up many ethical questions, where answers had to be found, and therefore proposed to lay the matter to rest for some time. They did not state which ethical questions exactly needed answering, probably because they did not know them, or did not know that they already had them on their own table.

This point did not prove to be any great obstacle to the formation of the database. It neatly dismissed the fact that most of the ethical questions already lie with the individual doctors' journals and their own databases. The formation of a national database does not change the nature of medical databases entirely. Let us remember that the nation in question comprises around 275,000 people. The size of the database has already been exceeded elsewhere in the world.

In an article in DV, a daily in Reykjavik, it was suggested that a much better solution would be for each health institution to keep a separate database, which could be utilised in connection with each other, depending on the occasion. This solution does not seem at all realistic. It is more or less status quo ante, with each institution jealously guarding its "own" information, with predictable results. The view is also flawed in the way that it does not grasp what lies within a nationwide database, and that without all the factors that today make up deCODE, foreign investment in this sector would be nil.

Doctors have not had the opportunity up to now to do any research in a nationwide database, and the view of some of them, not to form any such database, must be considered without full ground. This proposal was not taken seriously by the legislative, and, as said before, the health database Act became law in the last weeks of 1998.
Also, especially to people abroad, the notion of a nationwide genomics database seems like Big Brother turned into a medical monster. Iceland is not just like any other nation in this respect. The total population is less than 300,000, and it seems that most of the inhabitants are related to something like ten generations back. In most places of the world, it would be a small clan. It resembles more an extended family than a nation.

People can opt out of the database by declaring so to the general surgeon's office. Anybody who opted out in 1999 is not a part of the database. After that, people can opt out, and no further data will be recorded on them into the base, but older data will not be erased. The general surgeon has sent a brochure to each home in the country to inform people of their rights in regards to the database. An English version of the Act is available on the Ministry of Health's home page.

The big questions in this matters were, of course, whether we could arrive to the same degree of information without granting a nationwide health database monopoly to one company in this country. The company says that it will not take the risk of this nationwide research without having the monopoly. This is probably true. If not, it would have started work on the database already. Instead, it has stuck to the limited research it can derive from individual doctors' research.

The big question for some people is whether the creation of a nationwide database infringes their personal rights. It is obvious that this information is already there and can be used in this manner by the state already, if it chooses to do so. That gives me reason to worry, and I can not see that a private company should be any more irresponsible in this matter, contrary to what a lot of people think. The state can and has blundered and security has been breached, and at most the person responsible will be fired. A private company in the same situation can go under, and will never take the risk.

The question of free and open trade was brought up, and is always valid. Monopolies are not unheard of in the drug industry, and many economists acknowledge that they have a basis in some industries. It is fairly obvious that a monopoly is vital for a database of this kind, and it would never be built without one.

A vital part of the value added by the database is better management for the public health sector. The Ministry of Health will gain access to an information system of unrivalled scope for management uses. Costs in the health sector keep piling up in Iceland like other countries, and the government readily grasped the idea of a nationwide health database to keep down costs, if at all possible.

deCODE genetics received on 22 January 2000 a government license to create and operate a nationwide database of health records for the people in Iceland. The licence stipulated a payment of up to $2,000,000 a year for the next eight years. The information that goes into the database will be coded one way, and the information retrieved from the database will be quantitative, not for groups of less than 10 people and not identifiable for any individual.

Evaluation

Information is widely used in Iceland. Information technology is strong, and written material is extensively bought and read. Because of the size of the nation, the libraries are small, and this marks library use in the country. The government policy is quite far-sighted, but it acknowledges that innovation in the field comes from other
places. The legal framework is both tight and well-meaning in schools, but information science has not thrived at all in Icelandic elementary or secondary schools. These have tended to follow, rather than lead. Where law is loose, or lacking, information technology is used extensively. The author maintains a list of Icelandic laws concerning library and information science on the Web, at http://this.is/sveinn. The list is presented both in Icelandic and English, and all the Acts but the latest discussed here are on this list.

Conclusion

I find that the government policy does not have large implications outside the official sector, and that it rather follows the development from outside, where things go faster. In some places, I even found unrealistic recommendations. However, it is worthwhile to have a look at this policy, as the official sector holds close to a third of the economy. It is also necessary to have an overview of the legal framework for information. Iceland seems to be following the other Nordic countries, both in official policy, legislation and general state of information structure.

I found that the legislation for the Central Health Database to be sound and that it would benefit both the health authorities and the private company that runs it, as well as the general public. I found criticism against forming the database rooted in ignorance, beginning anew abroad as it was sizzling out in Iceland. Especially, I ask why people will generally claim to trust official authorities with their personal information rather than a private company, when there is ample evidence of information leakage from government sources and nobody has been sacked or reprimanded for those reasons, and that if it happened to a private company, it would have the gravest consequences for that company, and therefore is much less likely to happen.


Erlendsson, Jon (1998, May 5.). Erfdafraedi og personuupplysingar. DV.