

Assignment of International Standard Serial Numbers (ISSNs) to online resources: a research project

The ISSN system is a well-known and well-established system for the identification of serial publications. The ISSN Network is co-ordinated by the International Centre (IC) based in Paris, and there are over 70 ISSN National Centres worldwide. In the world of electronic resources there is an increased value of the ISSN as a persistent identifier, and the assignment of ISSNs to online resources is strongly encouraged by the IC. However, anecdotal evidence had suggested that this might not be consistent throughout the ISSN Network. The aim of the research project was to explore any differences and variations in practice that may exist between the National Centres, and the reasons for these. The research was undertaken using four National Centres as case studies and three main areas of research were undertaken to produce data. These were observation, interviewing and documentary analysis. The research was carried out using a theoretical framework generated by the ideas of Bowker and Star (1999)¹.



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Introduction

The research project was undertaken as part of the final year study for a BA (Hons) Information & Library Studies at the Leeds Metropolitan University. The successful application for the UKSG Research Award enabled an improved methodology for the research through the use of face-to-face interviews and direct observation, and also allowed study not just of the Directors of ISSN National Centres, but of those members of the centres actually carrying out the day-to-day duties. The four ISSN National Centres used as case studies were the ISSN UK Centre, the Irish ISSN Centre, ISSN Canada and the US ISSN Centre.

An in-depth literature review was undertaken to identify issues in the field of electronic publishing with specific reference to the library community. This identified the key issues surrounding the ISSN Network in the electronic environment and highlighted the importance of the ISSN as a unique identifier in the electronic publishing environment, and so helped inform the design and choice of questions for the research of the case studies.

A qualitative approach was taken to the

research and this was informed by the social informatics approach of Bowker and Star¹, who in their study of classification systems highlighted the following key areas:

It is often not the ideal job that is done, but the doable job, and that when faced with too much information or too many alternatives, people will 'satisfice'.

Even when in place, classification systems are prone to people 'fiddling' with them, as standardised forms cannot always account for every local contingency. This situation is described by Bowker and Star¹ and Rolland and Monteiro² as the creation of 'work-arounds'.

The idea that groups not used to working together are often forced to co-operate, and identification of the various roles of key players. The concept of 'boundary objects' that inhabit several different communities of practice yet satisfy different information requirements for each of them. 'Boundary objects' involve co-operation across communities of practice, and include divergent viewpoints and perspectives. The need to look both 'inside' and 'outside',

and the idea that the creation of an information infrastructure is as much social, political and economic work as it is theoretical.

Outline

All the ISSN National Centres chosen as case studies are based in the national library of their particular country, identified as follows:

- A. ISSN UK Centre, based at the British Library, Boston Spa.
- B. Irish ISSN Centre, based at the National Library of Ireland.
- C. US ISSN Centre, based at the Library of Congress.
- D. ISSN Canada, based at the National Library of Canada.

The case studies are referred to from here on in as Cases A, B, C and D.

Using the most current statistics available at the time from the IC web site, dated 2002, they showed a total of 1,037,156 records in the international database, of which 13,278 were coded to show they were online (remote) resources. Table 1 shows the figures for assignment of online ISSNs for each of the case studies.

Of the four centres chosen, three are the top three for assigning ISSNs to electronic resources, the other being 40th in the table, having only assigned 25. There were also differences in staff numbers, relationships within the host institutions and different levels of automation.

A large amount of data was generated by the research and it was only possible to analyse certain key areas for the final report. For the purposes of this article, three of these areas are discussed: bar-coding, electronic publishing and relationships affecting the ISSN Network.

Findings

Although the original research question was whether ISSNs were assigned consistently to

online resources throughout the ISSN Network, what came out strongly in the research was that generally many of the differences between the case studies appeared to be on a more basic level, due to such factors as the host institution or resources, rather than simply due to problems associated with electronic resources.

Bar-coding

The literature had identified bar-coding requirements as a factor in the application for and use of the ISSN. There are three main types of bar-code. These are the EAN (European Article Number), SISAC (Serials Industry Systems Advisory Committee) and UPC (Universal Product Code), and these enable scanned check-in and inventory control, and are often used for commercial purposes.

The SISAC bar-code is used in North America, and incorporates the ISSN. Although this can be utilised by libraries and library-affiliated organisations, it is not very heavily used. The UPC code is also used in North America. This is found on supermarket products, and includes mass-market magazines.

The UPC does not incorporate the ISSN and so its use has no impact on the ISSN National Centres. The EAN bar-code is extensively used in Europe for magazine publications with the ISSN as the title identifier in the bar-code. Although available in North America, the EAN bar-code is not heavily utilised, and when it is, its main use is by major bookstore chains for trade and other book publications, and so has no major impact on the ISSN Centres.

Problems associated with bar-coding take up quite a lot of staff resources in Cases A and B, either dealing with enquiries about bar-coding, or just establishing whether an application for an ISSN for a title actually falls within the definition of a serial, or whether the publisher is merely trying to get an ISSN in order to produce a bar-code.

Table 2 shows the marked difference in use of

Country	Position in table online	Total records in ISSN Online (by country code)	Online records in database (coded 'co')	Overall % in database
Case C	1st	161,026	2,748	17.89%
Case D	2nd	107,932	2,387	15.54%
Case A	3rd	64,315	1,372	8.93%
Case B	40th	3,604	25	0.16%

Table 1. Online ISSN figures for the National Centres

	EAN bar-code use	SISAC bar-code use	UPC bar-code use	Problems identified
Case				
A	Yes	No	No	ISSN requested for publications that do not fall within definition of a 'serial'. Large number of requests for ISSN for use in bar-code. Persistent enquiries about bar-coding problems. ISSNs are free, other identifiers, e.g. ISBNs, incur costs.
B	Yes	No	No	ISSN requested for publications that do not fall within definition of a 'serial'. Most of demand for ISSNs generated by bar-code requirements. Information given about bar-coding. Increasing use of bar-codes. EAN Ireland advise publishers to contact the Irish ISSN Centre for information.
C	Occasionally	Occasionally	Yes	Have been spared problems associated with use of EAN due to low use. SISAC also not heavily used.
D	Occasionally	Occasionally	Yes	Supposed to encourage use of EAN or SISAC, however, publishers really want the UPC. Only the odd enquiry received about bar-coding.

Table 2. Bar-code use

the various bar-codes in the countries of the case studies.

The bar-coding agreement was originally approved by the IC and the EAN. This, however, now actually causes major problems for both Cases A and B.

Although the agreement was made a long time ago, Case A stated: "It's only in fairly recent years that it's come back to haunt us" because of the need of publishers and distributors to have different bar-codes, and therein, different ISSNs. This is due to situations such as price testing of magazines, and promotional sales in supermarkets. Case B suggested that, at the time the agreement was made, it perhaps was not realised how complicated the market could become, with the resulting demand for ISSNs for titles that did not fit the criteria for ISSNs. Case B states that this sometimes results in "having to bend the rules". This 'bending of rules' is an example of what Bowker and Star¹ and Rolland and Monteiro² refer to as 'tinkering' or 'work-arounds', that is, users will tailor whatever standardised forms there are to fit with their needs, or in this instance, the needs of the bar-code.

Case A states that, although European-wide, there seemed to be fewer problems in Europe due to some sort of manipulation of the EAN bar-code standard that results in fewer requests for multiple ISSNs for special issues and price testing. It would therefore appear that in the rest of Europe the bar-coding industry bends their rules,

resulting in less 'tinkering' and 'work arounds' for the ISSN Centres.

It is also interesting to note the range of views regarding the bar-coding situation, and the various approaches taken by the different National Centres in the Network. Information gained from discussion of this topic on the ISSN e-mail list serve gives a 'snap shot' of the situation in some of the 15 ISSN National Centres based in the 18 countries that have ISSN-based EAN bar-coding.

Many of the National Centres posted comments indicating that ISSNs would be assigned to material not truly eligible for a number, because of the bar-code-related needs of distributors and publishers. The following are extracts from some of the postings:

"often creative ways to get around difficulties without breaking the rules"

"since many distributors now require a bar-code, we have bent our rules a lot in order to accommodate this"

"if success was to be achieved in promoting the ISSN as a standard, and if the publisher has a legitimate need for an ISSN (and bar-codes fit that role) then should assign a number"

This has led to a variety of 'unusual' serial-type publications that have been assigned ISSNs, including the following:

- a product with pillow cases, that could be written on, that would be issued periodically
- a story to be produced on T-shirts

Case	Proactive assignment	Reactive assignment	Guidelines used
A	Not before development of e-media cataloguing team in host institution.	Yes, in ISSN Centre	Directors' own draft guidelines created and subsequently circulated within network.
B	No	Yes, but only if necessary	Draft guidelines created by Case A, and also frequent contact with IC, by e-mail.
C	Yes	Yes	CONSER cataloguing rules
D	Yes, with limits	Yes	CONSER cataloguing rules

Table 3. *Electronic publishing*

a paper bag, to be issued every three weeks, that had a publisher imprint and so fulfilled the serials criteria.

Rolland and Monteiro² describe the need to strike a balance between the need for the information infrastructure to adapt to local contexts, whilst coping with complexity by leaning towards universal solutions and standards. For the National Centres, the local context means an environment dominated by barcode use, and the complexity dealt with by use of the ISSN rules.

Electronic publishing

The approach taken to assignment of ISSNs to electronic resources was also looked at, in particular whether this was proactive or reactive, and also what guidelines were used. Table 3 gives an indication of this.

Bowker and Star¹ suggest that in studies of all types of work, it is often not the ideal job that is done, but the doable job. The ISSN co-ordinating body, the IC, would like to see more electronic resources being assigned ISSNs, however the research showed that the ability and capacity of the case studies results in a 'doable' job rather than an 'ideal' job.

Although the second largest assigner of ISSNs to electronic publications and positively encouraging publishers to apply for ISSNs for every format of their publication, Case D acknowledges that "sometimes that sort of opens Pandora's Box", and that, although when publishers contact them for ISSNs they inform them of this, they are not really in a position to seek out publishers to inform them that all formats of their publications could have ISSNs, because "I think it's in the thousands the number of publications, and that's only the tip of the iceberg". Case B was in agreement on this point when discussing electronic publications,

stating that due to the volume of these and the problems they create, they could only be dealt with reactively, rather than proactively.

Postings on the ISSN e-mail list serve highlighted the confusion regarding this type of material, with the different National Centres stating their different approach and treatment of these, whilst all three forms of primary research drew attention to the desire within the ISSN Network for some form of written guidelines for assignment of ISSNs to electronic publications.

The Director of Case A had fairly recently created some draft guidelines, initially for members of staff within his centre, but these had then been circulated within the Network for comment, and also discussed at the 27th Directors' Meeting, and subsequently revised. These guidelines had been gratefully received by most National Centres, but it is interesting to note that the need for these guidelines was not felt by Cases C and D, as both of these were using the cataloguing rules of their host institutions to assign ISSNs to electronic material.

Relationships affecting the ISSN Network

The International Centre (IC)

The relationships between the National Centres and the IC are complex, due to the diverse nature of the National Centres, and the unique position held by the IC.

The following is a summary of the key issues raised by the case studies in relation to the IC:

International Centre

not part of the library community, and as such is 'one step' removed from the issues feeling that the IC is 'removed' from the National Centres produce 'good ideas' but these are often difficult to implement

inability to fully understand constraints within which the National Centres operate
 pressure applied to National Centres to assign more ISSN's to electronic material
 more support required in the form of guidelines from the IC, in area of electronic publishing

Case studies

National Centres to be open about the environment within host institution and consequential constraints
 alert IC to workloads, and backlogs
 need for National Centres to 'bend the rules' in order to accommodate agreements made by IC, e.g. bar-coding
 broadening of scope of ISSN's will result in increased workload
 lack of resources
 in some instances the draft manual is being used before the (as yet unknown) implementation date because of lack of current guidelines

In the literature, Rolland and Monteiro², in discussing the adaptation of information systems to local contexts, suggest that a pragmatic balance can only be negotiated when invisible costs and work are made explicit, and several of these issues illustrate this point here, with the National Centres perhaps not being transparent about their own constraints and requirements to the IC. This should, however, be balanced with consideration for the IC and the pressures under which it, too, operates. Although the IC was not one of the case studies for this particular study, the literature does highlight pressures within the information community for the IC as the co-ordinating body to be more vigilant in assigning ISSN's to electronic resources (Jones³) and for the ISSN to be promoted as a standard and its use optimised (Daigle⁴).

Relationships in the external environment

It is clear the ISSN does not exist in isolation of other standards or other key players in the information community. Case C suggests greater emphasis be placed on the needs of the user community, with a need to assess who the primary users are as "we can't be all things to all people", and with this a need to consult with these users of the ISSN. All the case studies outlined various difficult situations encountered with players in the

information community, such as publishers, thus linking into Bowker and Star's¹ idea of groups not used to working together being forced to cooperate. Terry's⁵ emphasis on communities in the information world working together to develop standards, guidelines and best practices for electronic resources seems to have greater importance in view of the difficulties verbalised by the National Centres, in dealing with these types of resource.

Bowker and Star¹ draw attention to the way in which classifications which may appear natural, eloquent and homogenous within a context may appear forced and heterogeneous outside of that context. For the ISSN Network, this has been a problem when assigning ISSN's to electronic resources, and difficulties have also been encountered when trying to explain to those in the publishing community why one particular electronic format may require an ISSN but another may not.

The literature outlined the idea of 'boundary objects' (Bowker and Star¹), and the results of the research point towards the ISSN being a boundary object in the information community. An ISSN will be assigned to a publication, but its subsequent use will be different depending on the individual using it; a distributor may use it simply to create a bar-code, a publisher may include it in promotional material, an academic when citing published work, libraries in catalogue records, and the ISSN Network will use the information to add to the International ISSN database.

Conclusions

There will always be problems in trying to ensure consistency with an international standard due to the differing social, cultural, political and economic environments within which standards agencies operate internationally, and according to Bowker and Star¹, true universality is (necessarily) always out of reach, and the results of this research support this notion.

For the ISSN Network these differing problems are further exacerbated by the emergence and growth of electronic publications, and the associated problems these have brought with them.

Some differences in approaches to assigning ISSN's are directly attributable to electronic resources, with the research suggesting that levels

of experience and expertise and the confidence of staff and directors in the case studies affect the assignment of ISSNs to electronic resources. The expertise in two of the case studies seemed to be gained from the comprehensive guidelines that are used, these being the cataloguing rules for the host institution, whereas for the other two case studies, electronic resources still seem to be more of an 'issue'. How the host institution approached and dealt with electronic publications also had a marked effect, but this could also be due in part to the guidelines used.

The effect of the bar-coding agreement obviously has major implications for two of the case studies, and it is unfortunate that these are the same two case studies that do not have the benefit of having comprehensive cataloguing guidelines which include guidance on online resources. Due to the original bar-coding agreement, these case studies suffer from a degree of loss of control over what they are expected to assign ISSNs to, and with it an increasing number of requests, as well as having to 'bend the rules' of the standard.

The results of this research suggest a need to work more closely with others in the information community such as publishers, distributors and others involved with electronic publishing.

This study raises issues that would benefit from further research, and it is proposed that if further research were to take place, this should cover the following:

Research the IC.

Re-visit the National Centres after implementation of the revised ISSN manual to see if this has improved levels of confidence and expertise when dealing with electronic material.

Consider researching more National Centres.

Compare all the areas looked at, not just those chosen to compare in detail in the study, in order to fully exploit the research undertaken and data compiled.

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