An Archival Analysis of ACIS Research Papers

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Abstract

The Australasian Conference in Information Systems (ACIS) has been a significant outlet for the research of Information Systems academics and practitioners for nearly two decades. This paper reports on the collection and archiving in electronic form of all the papers from the eighteen ACIS conferences held since the first conference in 1990. While there has been a very large increase over time in the number of research papers submitted to ACIS, reflecting the growth in IS research in Australasia, the percentage of papers accepted for presentation has declined. An analysis of the ACIS papers shows changes in subject matter reflecting changes in the IS discipline over time. Interesting patterns are revealed with regard to the body of work presented at ACIS by institutions across Australia and New Zealand as well as increasing contributions by researchers from outside Australasia.

Keywords
Archival analysis, Australasian Conference in Information Systems, Information Systems, research agenda, History of IS.

INTRODUCTION

In 1990 the First Annual Conference on Information Systems was held in Melbourne. This Australian forum on Information Systems (IS) research evolved, by 1994, into the Australasian Conference in Information Systems (ACIS). Since ACIS is the premier conference in Information Systems for Australasia, the eighteen volumes of proceedings from these conferences represent a storehouse of data on the nature of IS research in Australia and New Zealand.

The first task in this project, a major one in its own right, was to capture every one of the papers from these eighteen annual conferences in electronic form. This entailed the aggregation of existing CDs holding the research papers from later ACIS conferences, as well as the collection and scanning of hard-copy proceedings from the earlier conferences. The complete set of ACIS papers, in electronic form, has now been provided, as a service to the IS community, to the AIS e-Library. From this base data, an EndNote database was established by the project team, providing a convenient form for accessing data on all 1,447 papers from this series of conferences. This EndNote database has also been provided to the IS community via Felix Tan’s AIS web page.

RESEARCH QUESTIONS

It was apparent that the richness of the data available provides the basis for a very extensive analysis. Yet the resource demands of detailed analysis suggest that an appropriate approach involves an early broad analysis, followed by later multi-team analyses. To give an indication of the demands of archival analyses, it is worth noting the observation by Palvia et al. (2003), who record that six individuals took more than a year just to code the 843 Information Systems articles they analysed.

The first phase of analysis, based on analysis of the EndNote database together with a table of additional data relating to the eighteen ACIS conferences held between 1990 and 2007, is reported in this paper. It should be noted that, as a preliminary analysis, this involves a relatively limited examination of factors. The research questions relevant to this first phase of analysis of ACIS data include the following:

- What trends are evident in relation to the size and status of ACIS?
- What trends are evident in relation to acceptance of submitted papers?
- Which universities have been most prominent at ACIS?
- What changes have occurred in the nature of IS research in Australasia since 1990?
Which IS research topics have prevailed in Australasia since 1990?

CLASSIFICATION OF THE ACIS DATA

With all 1,447 papers from ACIS in electronic form, the next important challenge was to determine guidelines for analysing the papers. The task of deriving a well constructed classification system for IS papers was another complex one. Suffice to say that no widely accepted classification system exists for the IS discipline. The project team devoted effort to an improved methodology for arriving at such a classification system. This work is not concluded. Here, only a brief outline is given of the factors considered in arriving at the classification system used in this report.

An important consideration was comparability with other analyses of IS research paper collections elsewhere; ideally, the approach taken with the ACIS papers would allow comparisons with results from similar studies in other parts of the world. However, a second criterion for the analysis approach, potentially in conflict with the first one, was to devise an approach that would provide the most significant indicators of the state of IS in Australasia consistent with efficient and economical analysis.

A first consideration was an appropriate number of topic classifications. On the one hand, fewer than 20 topics would probably be too general to be useful; more than 50 topics and the coding task would become unduly difficult. Hierarchical coding schemes are impractical if the top level classifications are not obvious. Barki Rivard & Talbot (1993) developed a hierarchical topic coding scheme for Information Systems but it was felt by the study team that the Barki Rivard & Talbot (BRT) classification did not permit easy coding of IS research papers. So, a single level topic classification scheme, with around 30-40 topic choices, was an agreed objective of the team in devising a suitable topic classification scheme. This number of topics is also consistent with the number used by other researchers who have examined the topics of IS research: Claver et al. (2000) used 31, Vessey et al. (2002) used 44, Glass et al. (2004) used 49 and Palvia et al. (2004) used 33.

At the broadest level, using a bottom-up classification approach, from perusing the set of 1,447 ACIS papers, all papers were classified to distinguish more technical research topics from those that were more behavioural. The research team noted that a substantial group of papers in the set dealt with specific issues of IS education, so were not readily accommodated by the Technical/Behavioural dualism, necessitating a third broad category, Educational. Again, it appeared from an initial pass of the set of papers that there were numbers of diverse papers fitting poorly into the three categories already established. Hence, following established precedent from the researchers cited in the paragraph above, a fourth broad category, Other, was created. So, at the coarsest level of classification for the archived ACIS papers, just four categories of research papers were accepted by the research team:

- Technical
- Behavioural/Managerial
- Educational (i.e. IS curriculum related)
- Other

At a finer level of categorisation, the research team derived 32 topics. The 32 topic categories established drew heavily on the topic categories proposed by Barki et al. (1993) and by Palvia et al. (2004). This satisfied the team’s wish to use a topic categorisation scheme that would facilitate comparison with the results of similar previous studies elsewhere. The 32 topic categories are shown in Table 1 below, in association with the ranking of topics treated at ACIS.

CODING

Guidelines were prepared by the research team to assist coders in the selection of appropriate categories for each research paper. After training of two coders, a sample group of ACIS papers was selected for independent trial coding. When differences had been reconciled in relation to the sample, the two coders set about coding all the ACIS papers independently. Ultimately, where differences existed between the coding for a particular paper, the full team reviewed the options and agreed on the final coding. An “adjusted count” system was used (Chua et al. 2003) to calculate the frequency of research topics; in this first phase research, the two coders each nominated two topics for each paper, the same topic being repeated where only one topic was adequate to categorise a paper. The weighted count for each topic was the sum of all instances where that topic had been coded as one of the two topics associated with each of the 1,447 papers.

In coding the ACIS papers, the coders relied on keywords where they were provided and meaningful. In the event, it happened that many of the keywords were not adequate to allow accurate coding. In cases where no keywords were provided, or the keywords were insufficient, the classification was done based on reading of the
abstract. If an article could not be classified based on its abstract into one or more of the categories, then the entire article was read. This approach was consistent with one used and recommended by Farhoomand and Drury (1999).

FINDINGS

In this first phase of the archival analysis, findings were derived from two main data sources. In the first instance, a table of historical data about the 18 ACIS conferences, between 1990 and 2007, was drawn on. A sample of the complete history table is given in Appendix 1. The full table is available on request. This table had been developed by the research team from a variety of sources, most commonly from the individual conference chairs. For each of the 18 conferences, the table stores the following data:

Year of conference; City; Sponsoring University; Program Chair(s); Conference Chair(s); Organising Chair(s); Conference Dates; Duration; # Submissions; # Countries (1st Author); Acceptance Rate; # Parallel Streams; # Papers in Proceedings; # Panels; # Tutorials; Keynote and Invited Speakers; # Delegates; Doctoral Consortium; # Consortium Students; Consortium Chair(s).

The second source of data was the EndNote database of all conference research papers, totalling 1,447 papers.

Changing Size and Status

The table of historical data summarising the 18 conferences reveals major changes in the size and status of ACIS over time. That ACIS has grown in size since 1990 is no surprise; however, the extent of the growth of the conference is impressive. At the first ACIS, in Melbourne, there were just 15 papers presented, in a single stream over one day. By the fourth conference, the number of papers had grown to 60, with the conference extending over three days. From 1993 on, three days became the standard duration for the conference proper. It was not until 1999, in Wellington, that more than 100 papers were presented at an ACIS conference, with a peak number of ACIS papers (147) in Perth in 2003. Delegate numbers are not available for all eighteen conferences. However, it is not until 1994 that there is evidence of delegate numbers exceeding 100, while only in the latter half of the 18-year span have delegate numbers topped 200, with an apparent peak attendance of 283 in 2002. Since 2002, there is a trend to declining delegate numbers at ACIS. The possible explanations for this decline are manifold: the decline in IS staff numbers in universities worldwide; competition from other IS conferences, such as PACIS, which commenced in 1993; government policies reducing the research status of conference papers relative to journal papers. The issue warrants further debate, elsewhere.

Associated with a recent decline in the size of ACIS, we should look to see if there is evidence of any equivalent decline in its status. Certainly, over the life of the 18 ACIS conferences to date, there is evidence of its increased status as an outlet for IS researchers. The number of research paper contributed to the conference can be taken as one indicator of its status as a research forum. In the first half of its history to date, ACIS only once had more than 100 research papers submitted, 112 papers in 1996; yet, over the latter half of its history, ACIS has regularly received more than 200 submissions, peaking at 262 in 2005. While there has been some drop off in the number of papers submitted to the last two conferences, falling just below 200 on both occasions, it is perhaps too early to nominate these figures as indicative of a decline in the status of ACIS. Certainly, the number of papers submitted over the past two years seems strong relative to the decline in numbers of Australasian IS academics during this period. Another indicator of the status of ACIS might be the numbers of non-Australasian IS researchers who have submitted papers to ACIS over time. Across the 18 years of ACIS, researchers from 31 different countries outside Australasia have authored ACIS papers. While the number of first authors from countries outside Australasia remained in single figures for the first half of ACIS history, in the latter half the number of foreign authors has averaged 10, peaking at 14 in 2007.
Prevailing IS Research Topics in Australasia Since 1990

Table 1. Classification of ACIS Papers, in Order of Frequency

<table>
<thead>
<tr>
<th>Topic</th>
<th>Weighted Count (x2)</th>
<th>% of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS Development /Methods and Tools</td>
<td>377</td>
<td>13.0%</td>
</tr>
<tr>
<td>Theory of IS</td>
<td>257</td>
<td>8.9%</td>
</tr>
<tr>
<td>Resource Management/IS Management Issues</td>
<td>179</td>
<td>6.2%</td>
</tr>
<tr>
<td>Electronic Commerce/Interorganisational Systems</td>
<td>175</td>
<td>6.0%</td>
</tr>
<tr>
<td>IS Education</td>
<td>144</td>
<td>5.0%</td>
</tr>
<tr>
<td>IS Application Areas</td>
<td>139</td>
<td>4.8%</td>
</tr>
<tr>
<td>IS Planning (incl. Alignment)</td>
<td>126</td>
<td>4.4%</td>
</tr>
<tr>
<td>Technology Transfer (incl. innovation, acceptance, adoption, diffusion)</td>
<td>120</td>
<td>4.1%</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>118</td>
<td>4.1%</td>
</tr>
<tr>
<td>IS Evaluation</td>
<td>113</td>
<td>3.9%</td>
</tr>
<tr>
<td>Internet/Computer based communication systems</td>
<td>99</td>
<td>3.4%</td>
</tr>
<tr>
<td>IS Research</td>
<td>96</td>
<td>3.3%</td>
</tr>
<tr>
<td>External Environment</td>
<td>91</td>
<td>3.1%</td>
</tr>
<tr>
<td>DSS/Executive Information Systems</td>
<td>86</td>
<td>3.0%</td>
</tr>
<tr>
<td>Security</td>
<td>84</td>
<td>2.9%</td>
</tr>
<tr>
<td>IS Usage</td>
<td>73</td>
<td>2.5%</td>
</tr>
<tr>
<td>Information Interfaces/Multimedia/Hypermedia</td>
<td>71</td>
<td>2.5%</td>
</tr>
<tr>
<td>IT Value/Impact</td>
<td>69</td>
<td>2.4%</td>
</tr>
<tr>
<td>Databases/DBMS</td>
<td>68</td>
<td>2.4%</td>
</tr>
<tr>
<td>Organizational Environment</td>
<td>60</td>
<td>2.1%</td>
</tr>
<tr>
<td>Organizational design /BPR/ Workflow Systems</td>
<td>59</td>
<td>2.0%</td>
</tr>
<tr>
<td>ERP</td>
<td>46</td>
<td>1.6%</td>
</tr>
<tr>
<td>IS Staffing</td>
<td>46</td>
<td>1.6%</td>
</tr>
<tr>
<td>AI /Expert System/Neural Networks</td>
<td>45</td>
<td>1.6%</td>
</tr>
<tr>
<td>IS Implementation</td>
<td>42</td>
<td>1.5%</td>
</tr>
<tr>
<td>Outsourcing of IS</td>
<td>26</td>
<td>0.9%</td>
</tr>
<tr>
<td>Software/Programming languages</td>
<td>25</td>
<td>0.9%</td>
</tr>
<tr>
<td>Networks/ Telecommunications</td>
<td>18</td>
<td>0.6%</td>
</tr>
<tr>
<td>End User Computing</td>
<td>16</td>
<td>0.6%</td>
</tr>
<tr>
<td>Hardware</td>
<td>8</td>
<td>0.3%</td>
</tr>
<tr>
<td>Customer Relationship Management (CRM)</td>
<td>5</td>
<td>0.2%</td>
</tr>
<tr>
<td>Supply Chain Management (SCM)</td>
<td>4</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

In both 2006 and 2007, researchers from more than a dozen countries presented papers. This would seem to be a sound endorsement of the high status of ACIS, given the decline in IS academic numbers worldwide and continuing competition from other regional IS conferences.
Trends in Acceptance of Submitted Papers

One measure of the quality of a research-oriented conference, such as ACIS, is a relatively low percentage of papers accepted for presentation and publication in conference proceedings, relative to the number of papers submitted. Clearly, this is not a definitive indicator of the quality of research papers at a conference, since at conferences that have established records in quality and rigour, such as the International Conference on Information Systems (ICIS), researchers know that only the very best research papers will be accepted; so, fewer lower quality papers may be submitted and less-experienced researchers may be less likely to submit papers. Nonetheless, acceptance rate offers some indication of the quality of a conference.

Not surprisingly, acceptance rates are not available for the earliest ACIS conferences; no acceptance rates are available for the first two conferences. However, acceptance rates are known for fourteen of the sixteen following ACIS conferences, the only exceptions being 1997 and 2006. Acceptance rates 1992-2007 are shown in Table 2, along with the percentage of papers from the host university relative to their overall percentage.

Table 2. ACIS Acceptance Rates 1992-2007 and Host Uni Representation

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>No. of Papers Submitted</th>
<th>No. of Papers Accepted</th>
<th>Acceptance Rate</th>
<th>Host Uni % Papers</th>
<th>Host Uni Average %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Wollongong</td>
<td>79</td>
<td>45</td>
<td>57%</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>1993</td>
<td>Brisbane</td>
<td>80+</td>
<td>60</td>
<td>&lt;75%</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>1994</td>
<td>Melbourne</td>
<td>85</td>
<td>56</td>
<td>66%</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>1995</td>
<td>Perth</td>
<td>82</td>
<td>63</td>
<td>77%</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>1996</td>
<td>Hobart</td>
<td>112</td>
<td>56</td>
<td>50%</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>1997</td>
<td>Adelaide</td>
<td>na</td>
<td>62</td>
<td>na</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>1998</td>
<td>Sydney</td>
<td>98</td>
<td>60</td>
<td>61%</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>1999</td>
<td>Wellington</td>
<td>194</td>
<td>103</td>
<td>53%</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2000</td>
<td>Brisbane</td>
<td>180</td>
<td>94</td>
<td>52%</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2001</td>
<td>Coffs Harbour</td>
<td>165</td>
<td>86</td>
<td>52%</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2002</td>
<td>Melbourne</td>
<td>151</td>
<td>104</td>
<td>67%</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>2003</td>
<td>Perth</td>
<td>246</td>
<td>147</td>
<td>60%</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>2004</td>
<td>Hobart</td>
<td>227</td>
<td>120</td>
<td>53%</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2005</td>
<td>Sydney</td>
<td>262</td>
<td>113</td>
<td>43%</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2006</td>
<td>Adelaide</td>
<td>na</td>
<td>108</td>
<td>na</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>Toowoomba</td>
<td>195</td>
<td>116</td>
<td>59%</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

It can be seen that acceptance rates for the past 10 years of the conference, 1998-2007, have been generally at or below 60%. Although comparable figures are not readily available for the other major IS research conferences worldwide, it would appear that ACIS compares well with the major regional IS conferences, PACIS and AMCIS, which are reputed to have similar, or higher, acceptance rates. Only ECIS, of the major regional conferences, seems to have a lower acceptance rate than ACIS over the past 10 years. Acceptance rates in the earlier, formative years of ACIS were sometimes higher than in more recent years.

In the early years of the conference, the university that sponsored the conference tended to be a major contributor of papers, contributing on average 16% of the papers. The extreme examples were Monash, which contributed 17 of the 60 papers, or 30%, of the papers presented at the 1994 conference and the University of Wollongong, which contributed 9 of the 45 papers, or 20%, of the papers at the 1992 conference. Since 1995, the average contribution of papers by the hosting university has been just 6.3%. However, the university that hosts the conference usually contributes more papers in the hosting year than in an average year. There are just three cases where the university hosting the conference had fewer papers than average accepted: Victoria University of Wellington (1999), QUT (2000), and UTAS (2004).
Universities Most Prominent at ACIS

Universities that have had, from early days, a strong IS presence, in terms of IS academic staff and IS students, tend to be the ones that have contributed most research papers to ACIS. So the major contributors over time have been: Monash University, with about 8% of all papers, followed by University of Melbourne (6%), Edith Cowan University (5%), Curtin University of Technology (5%), Deakin University (5%), Queensland University of Technology (4%), University of Wollongong (4%) and University of New South Wales (4%).

Representation of New Zealand Universities at ACIS

Victoria University of Wellington has participated every year except 1990, 1991 and 1994 and has contributed 2% of the papers presented at the conference. Massey University has also had a strong presence, contributing just fewer than 2% of all papers. The University of Auckland contributed to the conference in the 1990s but has not participated in recent years. By contrast, Auckland University of Technology, which was upgraded to university status in 2000, contributed 12 papers between 2003 and 2007.

Changes in the Nature of IS research in Australasia Since 1990

At the broadest level, all 1,447 ACIS research papers were categorised according to four types: Technical, Behavioural/Managerial, Educational, Other. In the years 1990-1998, about 26 per cent of the papers were classified as Technical, while, in the years since, only about 14 per cent were classified this way. By contrast, the percentage of papers that were coded as Behavioural/Managerial since 1998 has increased by about 20% relative to the years 1990-1998.

Changes at ACIS in the relative frequency of the four broad topic areas (Technical, Behavioural/Managerial, Educational, Other) are summarised in Table 3.

Table 3. Frequency at ACIS of Four Broad Topic Areas 2006-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Technical Papers</th>
<th>% of Year Technical</th>
<th>Behavioural/Managerial Papers</th>
<th>% of Year Behavioural/Managerial</th>
<th>Educational Papers</th>
<th>% of Year Educational</th>
<th>Other Papers</th>
<th>% of Year Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>3</td>
<td>20.0%</td>
<td>9</td>
<td>60.0%</td>
<td>3</td>
<td>20.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>1991</td>
<td>17</td>
<td>58.6%</td>
<td>9</td>
<td>31.0%</td>
<td>2</td>
<td>6.9%</td>
<td>1</td>
<td>3.4%</td>
</tr>
<tr>
<td>1992</td>
<td>8</td>
<td>17.8%</td>
<td>29</td>
<td>64.4%</td>
<td>1</td>
<td>2.2%</td>
<td>7</td>
<td>15.6%</td>
</tr>
<tr>
<td>1993</td>
<td>16</td>
<td>26.7%</td>
<td>38</td>
<td>63.3%</td>
<td>4</td>
<td>6.7%</td>
<td>2</td>
<td>3.3%</td>
</tr>
<tr>
<td>1994</td>
<td>23</td>
<td>41.1%</td>
<td>40</td>
<td>63.5%</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>1.8%</td>
</tr>
<tr>
<td>1995</td>
<td>17</td>
<td>27.0%</td>
<td>44</td>
<td>61.1%</td>
<td>4</td>
<td>6.3%</td>
<td>2</td>
<td>3.2%</td>
</tr>
<tr>
<td>1996</td>
<td>16</td>
<td>22.2%</td>
<td>43</td>
<td>70.5%</td>
<td>7</td>
<td>11.5%</td>
<td>1</td>
<td>1.6%</td>
</tr>
<tr>
<td>1997</td>
<td>9</td>
<td>14.8%</td>
<td>42</td>
<td>70.0%</td>
<td>2</td>
<td>3.3%</td>
<td>4</td>
<td>6.7%</td>
</tr>
<tr>
<td>1998</td>
<td>12</td>
<td>20.0%</td>
<td>286</td>
<td>62.2%</td>
<td>29</td>
<td>6.3%</td>
<td>24</td>
<td>5.2%</td>
</tr>
<tr>
<td>90-98</td>
<td>121</td>
<td>26.3%</td>
<td>286</td>
<td>62.2%</td>
<td>29</td>
<td>6.3%</td>
<td>24</td>
<td>5.2%</td>
</tr>
<tr>
<td>1999</td>
<td>18</td>
<td>17.6%</td>
<td>60</td>
<td>58.8%</td>
<td>14</td>
<td>13.7%</td>
<td>10</td>
<td>9.8%</td>
</tr>
<tr>
<td>2000</td>
<td>16</td>
<td>17.0%</td>
<td>71</td>
<td>75.5%</td>
<td>4</td>
<td>4.3%</td>
<td>3</td>
<td>3.2%</td>
</tr>
<tr>
<td>2001</td>
<td>15</td>
<td>17.9%</td>
<td>56</td>
<td>66.7%</td>
<td>11</td>
<td>13.1%</td>
<td>2</td>
<td>2.4%</td>
</tr>
<tr>
<td>2002</td>
<td>12</td>
<td>11.5%</td>
<td>82</td>
<td>78.8%</td>
<td>6</td>
<td>5.8%</td>
<td>4</td>
<td>3.8%</td>
</tr>
<tr>
<td>2003</td>
<td>17</td>
<td>11.6%</td>
<td>111</td>
<td>76.0%</td>
<td>12</td>
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<td>5</td>
<td>3.4%</td>
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<td>2004</td>
<td>11</td>
<td>9.2%</td>
<td>99</td>
<td>82.5%</td>
<td>8</td>
<td>6.7%</td>
<td>1</td>
<td>0.8%</td>
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<tr>
<td>2005</td>
<td>10</td>
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<td>90</td>
<td>80.4%</td>
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<td>7.1%</td>
<td>4</td>
<td>3.6%</td>
</tr>
<tr>
<td>2006</td>
<td>22</td>
<td>20.4%</td>
<td>71</td>
<td>65.7%</td>
<td>7</td>
<td>6.5%</td>
<td>8</td>
<td>7.4%</td>
</tr>
<tr>
<td>2007</td>
<td>14</td>
<td>12.1%</td>
<td>82</td>
<td>70.7%</td>
<td>7</td>
<td>6.0%</td>
<td>13</td>
<td>11.2%</td>
</tr>
<tr>
<td>99-07</td>
<td>135</td>
<td>13.7%</td>
<td>722</td>
<td>73.4%</td>
<td>77</td>
<td>7.8%</td>
<td>50</td>
<td>5.1%</td>
</tr>
</tbody>
</table>
These changes support the premise that research in IS has been moving away from a more technical emphasis in the early years and is now placing more importance on context. While it is too early to suggest that this trend is changing, 2006-2007 saw a relative increase in the number of Technical papers; 16% of papers were classified as Technical across 2006-2007.

There has been no clear pattern to the frequency of Educational topics. Across the eighteen conferences, about seven per cent of papers are Educational i.e. curriculum-related. The first five years of the conference include the years of both the highest and lowest percentages of such papers. At the first ACIS, three of the fifteen papers (20 per cent) were curriculum-related, while in 1994 there were no curriculum-related papers. Over more recent years, the numbers of papers of an Educational theme tend close to the eighteen-year average.

The topic IS Management, incorporating Methods and Tools, has been consistently the most popular at ACIS. However, there has been a relative decline in the frequency of this topic over more recent years. This relative decline can be seen as consistent with the earlier observation that Behavioural and Managerial areas of research have been increasing in frequency at ACIS relative to Technical areas of research, which have been relatively declining.

If we examine specific popular ACIS topics (from the 32 defined earlier) over just the past two years, Table 4, we see that while some topics remain represented with much the same frequency as in the past, there are some frequently presented ACIS topics that show major apparent change in frequency.

By reference to Table 1 and Table 4, it can be seen that the percentage of papers devoted to four of the most popular topics, overall, has remained high over the past two years. These are: Theory of IS, Resource Management/IS Management Issues, IS Application Areas, and IS Education. One topic, Electronic Commerce/Interorganisational Systems (fourth overall), has disappeared from the top ten list entirely for 2006-2007. There are also, over the past two years, fewer papers devoted to IS Development/Methods and Tools (from 13% overall to 8% over the past two years). At the same time, there has been an increase in research interest in three topics: IS Planning (including Alignment), Technology Transfer (including innovation, acceptance, adoption, diffusion), and Knowledge Management. These three topics can be seen to have moved from positions 7, 8 and 9 respectively, in terms of paper frequency over the life of ACIS, to positions 3, 4 and 6 over the 2006-2007 ACIS conferences.

Table 4. Ten Most Frequent Topics of ACIS Papers 2006-2007

<table>
<thead>
<tr>
<th>Topic</th>
<th>Weighted Count (x2)</th>
<th>% of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory of IS</td>
<td>36</td>
<td>8.0%</td>
</tr>
<tr>
<td>IS Development /Methods and Tools</td>
<td>36</td>
<td>8.0%</td>
</tr>
<tr>
<td>IS Planning (incl. Alignment)</td>
<td>30</td>
<td>6.7%</td>
</tr>
<tr>
<td>Technology transfer (incl. innovation, acceptance, adoption, diffusion)</td>
<td>29</td>
<td>6.5%</td>
</tr>
<tr>
<td>Resource Management/IS Management Issues</td>
<td>26</td>
<td>5.8%</td>
</tr>
<tr>
<td>Knowledge Management</td>
<td>24</td>
<td>5.4%</td>
</tr>
<tr>
<td>IS Application Areas</td>
<td>24</td>
<td>5.4%</td>
</tr>
<tr>
<td>IS Education</td>
<td>23</td>
<td>5.1%</td>
</tr>
<tr>
<td>External Environment</td>
<td>21</td>
<td>4.7%</td>
</tr>
<tr>
<td>Internet/ Computer-based Communication Systems</td>
<td>19</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

LIMITATIONS

Many of the limitations in this study relate to the fact that it is seen as just the first phase of a much larger study. As a consequence, the research questions posed are limited in number and complexity. Similarly, the precision of the statistics provided is not high. Of some more enduring concern is the fact that some basic, but interesting data, about the 18 ACIS conferences is missing. For instance, delegate numbers and acceptance rates for submitted papers have not yet been possible to acquire for several conferences, particularly earlier ones. The difficulties in acquiring such data may prove intractable, since many of the academics associated with the organisation of these conferences have now left academia.
The classification system used for this preliminary study has acknowledged limitations. It was recognised by the research team that no matter what classification scheme was used there would very likely be shortcomings. Palvia et al. (2004) describe discomfort experienced by their coders in not being able to readily classify some papers using their classification system. Given the fact that the classification system used in this study has been derived, in part, from the Palvia approach, it is inevitable that some of the weaknesses articulated in relation to the Palvia classification are present in the topic classification scheme adopted for this study. This study has served to highlight the absence of, and need for, a widely accepted universal classification system for IS research topics.

FUTURE STUDIES

This project points to the need for the development of a strong methodology to support archival analysis in an IS context. The literature on archival analyses in our field reveals a series of thorough, time consuming but relatively singular and ad hoc projects. At a most fundamental level, as mentioned above, there is a need to develop a widely accepted classification system for IS topics. While the project team ultimately settled on a variant of the classification derived by Palvia et al (2004), they explored some alternate approaches, including one derived from the IS Nomological Net described by Benbasat and Zmud (2003). This is a fertile area for further study. Similarly, more work is required to examine appropriate coding methods in an IS context. Amongst the ideas trialled here by the project team was the potential for having papers initially coded by the authors themselves; to this end, a web-based instrument was specified and developed to a prototype stage. Every phase of the IS archival analysis task will profit from improved, tested guidelines.

There is very great scope for further analysis of the ACIS archival data. Having all research papers from the eighteen years of the conference in electronic form makes analysis much more practical than had been the case previously. Similarly, it has been helpful, for preliminary analysis, to have available an EndNote database of the ACIS proceedings. However, for a more thorough review of the data, it is planned that the ACIS data be stored in another database more conducive to detailed analysis.

It would be interesting to have a more complete view of the contributions to ACIS, over time, of different universities. In fact there are a range of questions that can be investigated in relation to universities contributing to ACIS, as well as patterns of inter-University collaboration.

Possible changes in research methods and research topics in Australasia invite further investigation, while comparisons between the Australasian situation and that in other parts of the world, as reported in comparable studies elsewhere, offer useful insights. It would be of interest to know whether there is evidence of regional differences in the types of IS research undertaken in different regions within Australasia in anything like the manner reported by Avgerou et al. (1999) across the countries of Western Europe. A further extension could be made by examining the ACIS data relative to results from the study by Evaristo and Karahanna (1997), which compares research in Europe and America.

ACIS has a relatively short history. As a consequence, clear trends can be masked by short term variations. The longer the historical perspective, the greater the prospect for establishing genuine trends. Certainly, now that a base has been established, it is important that the archive of ACIS data be maintained and expanded to incorporate material from ACIS 2008 and all successive ACIS conferences.

REFERENCES


### APPENDIX 1

Appendix 1. Sample History Table – ACIS 2001-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
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<tr>
<td>City</td>
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<td>Melbourne</td>
<td>Perth</td>
<td>Hobart</td>
<td>Sydney</td>
<td>Adelaide</td>
<td>Toowoomba</td>
</tr>
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<td>DCcecz-Kecmanovic</td>
<td>MMcGrath</td>
<td>FBurstein</td>
<td>AWeiss</td>
<td>CStanding</td>
<td>PLove</td>
<td>SElliot</td>
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<tr>
<td>conference chair(s)</td>
<td>Bruce Lo</td>
<td>Arthur Tatnall</td>
<td>Janice Burns</td>
<td>Carol Pollard</td>
<td>David Wilson</td>
<td>AKoronios</td>
<td>SSpencer</td>
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<tr>
<td>organising chair(s)</td>
<td>Geoff Sandy</td>
<td>Nick Leathbridge</td>
<td>Leonie Ellis</td>
<td>Jim Underwood</td>
<td>ACater-Steel</td>
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<td>dates</td>
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<td>1-3 Dec</td>
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<td>3 workshops</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Keynote and invited speakers</td>
<td>(1) P. Coroneos</td>
<td>(2) E.M. Trauth</td>
<td>(3) MVitalie</td>
<td>(1) B Jones</td>
<td>(2) MBroadbent</td>
<td>(3) CBennett</td>
<td>(4) W Wojkowski</td>
</tr>
<tr>
<td># of delegates</td>
<td>220</td>
<td>283</td>
<td>255</td>
<td>236</td>
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<td>25th Nov</td>
<td>30th Nov</td>
<td>Nov 30-Dec 2</td>
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<td>28</td>
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<td>consortium chair(s)</td>
<td>Kit Dampney</td>
<td>Mike Metcalfe</td>
<td>Graham Pervan</td>
<td>Sid Huff</td>
<td>IHawryszkie wycz</td>
<td>J. Fisher</td>
<td>G Gable</td>
</tr>
</tbody>
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ACKNOWLEDGEMENTS
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