

Stages of Growth for Knowledge Management Technology in Australian Law Firms

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Abstract

A stages of growth model is proposed consisting of four stages. The first stage is end user tools that are made available to knowledge workers, the second stage is information about who knows, the third stage is information from knowledge workers, and the final stage is information systems solving knowledge problems. This paper reports results from an empirical study of law firms in Australia.

Keywords

Sages of growth, IS maturity, Guttman scaling, survey instrument, law firms, knowledge work

INTRODUCTION

Stages of growth models have been used widely in both organisational research and information technology management research. These models describe a wide variety of phenomena - the organisational life cycle, product life cycle, biological growth, etc (King and Teo 1997), and assume that predictable patterns (conceptualised in terms of stages) exist in the growth of organisations, the sales levels of products, and the growth of living organisms. These stages are (1) sequential in nature, (2) occur as a hierarchical progression that is not easily reversed, and (3) involve a broad range of organisational activities and structures.

Various multistage models have been proposed for organisational evolution over time. These models differ in the number of stages. For example, Nolan (1979) introduced a model with six stages for IT maturity in organisations, which later was expanded to nine stages. Earl (2000) suggested a stages of growth model for evolving the e-business, consisting of the following six stages: external communication, internal communication, e-commerce, e-business, e-enterprise, and transformation. Each of these models identifies certain characteristics that typify firms in different stages of growth. Among these multistage models, models with four stages seem to have been proposed and tested most frequently (King and Teo 1997).

In this paper, a four-stage model for the evolution of information technology support for knowledge management in law firms is proposed and tested. The purpose of the model is both to be able to understand the current situation in a firm in terms of a specific stage as well as to be able to develop strategies to move to a higher stage in the future. The model is applied to Australian law firms based on survey research.

THE KMT STAGE MODEL

The knowledge management technology (KMT) stage model consists of four stages. The first stage is general IT support for knowledge workers. This includes word processing, spreadsheets, and email. The second stage is information about knowledge sources. An information system stores information on who knows what in the firm and outside the firm. The system does not store what they actually know. A typical example is the company intranet. The third stage is information representing knowledge. The system stores what knowledge workers know in terms of information. A typical example is a database. The fourth and final stage is information processing. An information system uses information to evaluate situations. A typical example is an expert system.

The contingent approach to firm performance implies that Stage I may be right for one firm, while Stage IV may be right for another firm. Some firms will evolve over time from Stage I to higher stages. A law firm moving from Stage II to Stage III is illustrated in Figure 1.

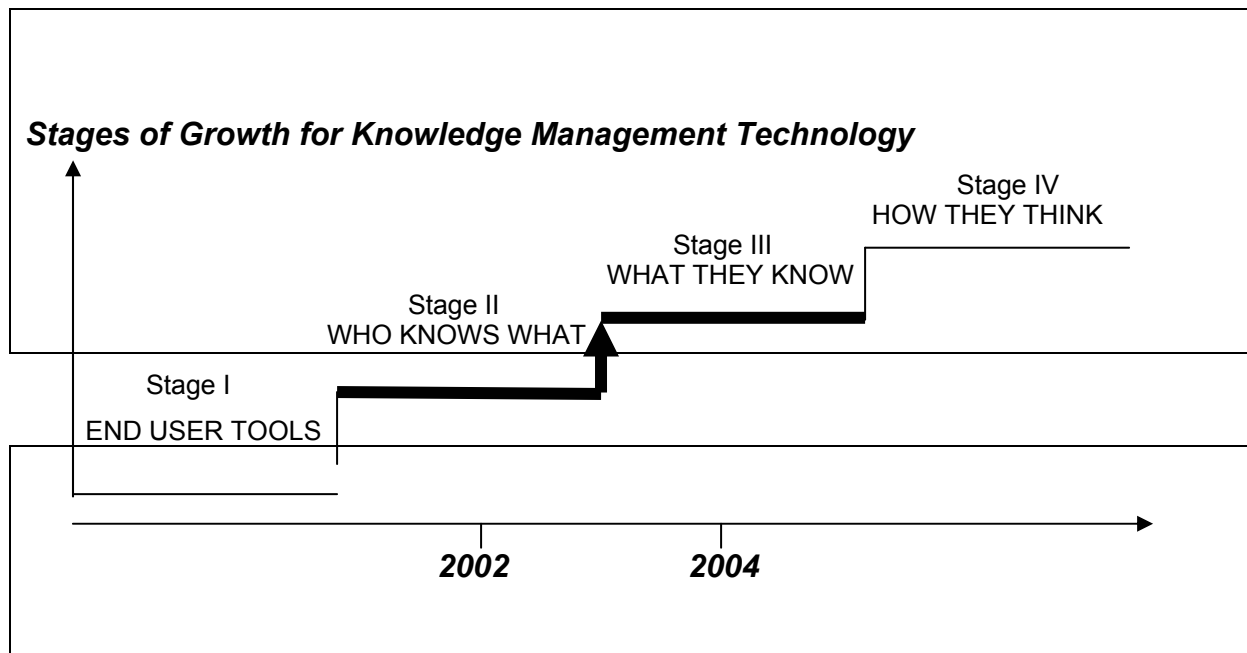


Figure 1: The Stages of Growth Model for Knowledge Management Technology

Stages of IT support in knowledge management are useful to identify the current situation as well as to plan for future applications in the firm. Each stage are described in the following:

I. End user tools are made available to knowledge workers. At the simplest stage, this means a capable networked PC on every desk or in every briefcase, with standardised personal productivity tools (word processing, presentation software) so that documents can be exchanged easily throughout a company. More complex and functional desktop infrastructures can also be the basis for the same types of knowledge support. Stage I is recognised by widespread dissemination and use of end-user tools among knowledge workers in the company. For example, lawyers in a law firm will at this stage use word processing, spreadsheet, legal databases, presentation software, and scheduling programs.

II. Information about who knows what is made available to all people in the firm and to selected outside partners. Search engines should enable work with a thesaurus, since the terminology in which expertise is sought may not always match the terms the expert uses to classify that expertise.

The creation of corporate directories, also referred to as the mapping of internal expertise, is a common application of knowledge management technology (Alavi and Leidner 2001). Because much knowledge in an organisation remains uncoded, mapping the internal expertise is a potentially useful application of technology to enable easy identification of knowledgeable persons.

Here we find the cartographic school of knowledge management (Earl 2001), which is concerned with mapping organisational knowledge. It aims to record and disclose who in the organisation knows what by building knowledge directories. Often called Yellow Pages, the principal idea is to make sure knowledgeable people in the organisation are accessible to others for advice, consultation, or knowledge exchange. Knowledge-oriented directories are not so much repositories of knowledge-based information as gateways to knowledge, and the knowledge is as likely to be tacit as explicit.

Information about who knows what is sometimes called metadata, representing knowledge about where the knowledge resides. Providing taxonomies or organisational knowledge maps enables individuals to rapidly locate the individual who has the needed knowledge, more rapidly than would be possible without such IT-based support.

One starting approach at Stage II is to store curriculum vitae (CV) for each knowledge worker in the firm. Areas of expertise, projects completed and clients helped may over time expand the CV. For example, a lawyer in a law firm works on cases for clients using different information sources that can be registered on yellow pages in terms of an intranet.

The creation of a knowledge network is an important part of Stage II. Unless specialists can communicate easily with each other across platform types, expertise will deteriorate. People have to be brought together both virtually and face-to-face to exchange and build their collective knowledge in each of the specialty areas. The knowledge management effort is focused on bringing the experts together so that important knowledge can be shared and amplified, rather than on mapping expertise or benchmarking that occurs at Stage III.

Knowledge directories represent more of a belief in personalised knowledge of individuals than the codified knowledge of knowledge bases and may demonstrate organisational preferences for human, not technology-mediated, communication and exchange (Earl 2001). The knowledge philosophy of firms that settle at Stage II can be seen as one of people connectivity. Consequently, the principal contribution from IT is to connect people via intranets and to help them locate knowledge sources and providers using directories accessed by the intranet. Extranets and the Internet may connect knowledge workers to external knowledge sources and providers.

III. Information from knowledge workers is stored and made available to all people in the firm and to selected outside partners. Here data mining techniques can be applied to find relevant information and combine information in data warehouses. On a broader basis, search engines are web browsers and server software that work with a thesaurus, since the terminology in which expertise is sought may not always match the terms the expert uses to classify that expertise.

One starting approach at Stage III is to store project reports, notes, recommendations and letters from each knowledge worker in the firm. Over time, this material will grow fast, making it necessary for a librarian or a Chief Knowledge Officer (CKO) to organise it. In a law firm, all client cases will be classified and stored in databases using software such as Lotus Notes.

An essential contribution that IT can make is the provision of shared databases across tasks, levels, entities, and geographies to all knowledge workers throughout a process (Earl 2001).

In one survey Alavi and Leidner (2001) found that 74% of respondents believed that their organisation's best knowledge was inaccessible and 68% thought that mistakes were reproduced several times. Such perception of failure to apply existing knowledge is an incentive for mapping, codifying and storing information derived from internal expertise. Alavi and Leidner (2001) also found that one of the most common applications is internal benchmarking with the aim of transferring internal best practices. To be successful, best practices have to be coded, stored and shared among knowledge workers.

In addition to (i) best practices knowledge within a quality or business process management function, other common applications include (ii) knowledge for sales purposes involving products, markets and customers, (iii) lessons learned in projects or product development efforts, (iv) knowledge around implementation of information systems, (v) competitive intelligence for strategy and planning functions, and (vi) learning histories or records of experience with a new corporate direction or approach (Grover and Davenport 2001).

At Stage III, access both to knowledge (expertise, experience, and learning) and to information (intelligence, feedback, and data analyses) is provided by systems and intranets to operatives, staff, and executives. The supply and distribution of knowledge and information are not restricted. Whereas we might say at Stage I, "give knowledge workers the tools to do the job", we now add, "give knowledge workers the knowledge and information to do the job". According to Earl (2001), this is another way of saying that the philosophy is enhancing the firm's capabilities with knowledge flows.

Although most knowledge repositories serve a single function, Grover and Davenport (2001) found that it is increasingly common for companies to construct an internal portal so that employees can access multiple different repositories and sources from one screen. It is also possible and increasingly popular for repositories to contain information as well as pointers to experts within the organisation on key knowledge topics. Often called Knowledge Yellow Pages, these systems facilitate contact and knowledge transfer between knowledgeable people and those who seek their knowledge. Stored, codified knowledge is combined with lists of individuals who contributed the knowledge and could provide more detail or background on it.

Grover and Davenport (2001) state that firms increasingly view attempts to transform raw data into usable knowledge as part of their knowledge management initiatives. These approaches typically involve isolating data in a separate warehouse for easier access and the use of statistical analysis or data mining and visualisation tools. Since their goal is to create data-derived knowledge, they are increasingly addressed as part of knowledge management at Stage III.

IV. Information systems solving knowledge problems are made available to knowledge workers and solution seekers. Artificial intelligence is applied in these systems. For example, neural networks are statistically oriented tools that excel at using data to classify cases into one category or another. Another example is expert

systems that can enable the knowledge of one or a few experts to be used by a much broader group of workers who need the knowledge.

Alavi and Leidner (2001) cite the example of an insurance company that was faced with commoditisation of its market and declining profits. The company found that applying the best decision making expertise via a new underwriting process supported by a knowledge management system based on best practices enabled it to move into profitable niche markets and, hence, to increase income. Grover and Davenport (2001) maintain that artificial intelligence is applied in rule-based systems, and more commonly, case-based systems are used to capture and provide access to customer service problem resolution, legal knowledge, new product development knowledge, and many other types.

Expert system is an example of knowledge management technology at Stage IV. Curtis and Cobham's (2002) short answer is that an expert system is a computerised system that performs the role of an expert or carries out a task that requires expertise. In order to understand what an expert system is, then, it is worth paying attention to the role of an expert and the nature of expertise. It is then important to ascertain what types of expert and expertise there are in business and what benefits will accrue to an organisation when it develops an expert system.

For example, a doctor having a knowledge of diseases comes to a diagnosis of an illness by reasoning from information given by the patient's symptoms and then prescribes medication on the basis of known characteristics of available drugs together with the patient's history. The lawyer advises the client on the likely outcome of litigation based on the facts of the particular case, an expert understanding of the law and knowledge of the way the courts work and interpret this law in practice. The accountant looks at various characteristics of a company's performance and makes a judgment as to the likely state of health of that company (Curtis and Cobham 2002).

All of these tasks involve some of the features for which computers traditionally have been noted – performing text and numeric processing quickly and efficiently – but they also involve one more ability: reasoning. Reasoning is the movement from details of a particular case and knowledge of the general subject area surrounding that case to the derivation of conclusions. Expert systems incorporate this reasoning by applying general rules in an information base to aspects of a particular case under consideration (Curtis and Cobham 2002).

Benchmark variables indicate the theoretical characteristics at each stage of growth (King and Teo 1997). For example, firms at Stage I can theoretically be expected to conform to values of benchmark variables listed under Stage I in Figure 2. However, this does not mean that it is not possible for firms at Stage I to have values of benchmark variables applicable to other stages. Rather, it means that the values of benchmark variables indicate the most likely theoretical characteristics applicable at each stage of integration. Figure 2 applies Guttman scaling, which is sometimes known as cumulative scaling or scalogram analysis (Frankfort-Nachmias and Nachmias 2002).

LAW FIRM SURVEY

A sample of 500 Australian law firms was obtained. The questionnaire was mailed to the managing director in each firm. 47 questionnaires were returned and received by the researchers. A summary of the characteristics of respondents is shown in Figure 3. Most respondents had a management position in the firm, and the most frequent reply was managing partner. The IT budget was 4.2% of the total revenue budget, and the IT staff was 3.1% of the total staff.

	Benchmark Variable	Stage I END USER TOOLS	Stage II WHO KNOWS WHAT	Stage III WHAT THEY THINK	Stage IV HOW THEY THINK
1	<i>Main purpose</i>	Administrative work	Access to information	Sharing information	Automating work
2	<i>Contribution of IT function</i>	Supplier of PCs	Technical infrastructure	Resource of information	Supplier of systems
3	<i>Role of IT manager</i>	Technology expert	Functional administrator	Resource manager	Knowledge management expert
4	<i>Performance of IT function</i>	Operational efficiency	Business implementation	Knowledge implementation	Long-term impact
5	<i>Trigger of IT for KM</i>	Individual lawyer's needs	Organisation's needs	Organisation's goals	Automate lawyers' work
6	<i>Top management's participation</i>	Seldom	Infrequent	Frequent	Almost always

7	User participation	Seldom	Infrequent	Frequent	Almost always
8	IT manager's participation	Seldom	Infrequent	Frequent	Almost always
9	Principal contribution	Efficiency of lawyer	Effectiveness of lawyer	Effectiveness of firm	Competitiveness of firm
10	Technology assessment	Seldom	Infrequent	Frequent	Almost always

Figure 2: Typology of Evolutionary Stages

Characteristic	Response
Job title	Managing partner (11), Knowledge manager (5), CEO (4), CIO (4)
Years with the firm	11 years
Persons in the firm	121 persons
Lawyers in the firm	76 persons
Partners in the firm	19 persons
Revenue budget	10.6 million dollars
IT budget	0.45 million dollars
Persons in IT function	3.8 persons

Figure 3: Characteristics of Respondents

In the second part of the survey instrument four research constructs were defined, one for each stage. Each construct was measured through a multiple-item scale. Each scale had five items, where the fifth item is a summary item. In Figure 4, the average response for each item is listed. The scale was from 1 (to a little extent) to 6 (to a great extent). End-user-tool systems such as word processing and e-mail have high scores, and the average score for end-user-tool systems is 4.5. Among who-knows-what systems, only the firm's intranet has a high average score, and the average score for who-knows-what systems is 3.0. Database with client cases and groupware for knowledge have highest scores among what-they-know-systems, where the average score is 3.1. Among what-they-think systems where the average score is 1.5, expert system has the highest score. Already from this table, we can see that the Stages of Growth model has problems in distinguishing between Stage II and Stage III. In fact, the average use of Stage III systems is slightly higher (3.1) than the average use of Stage II systems (3.0).

Knowledge Management Technology (KMT)	Use All	Alpha Scale	Use Scale	WKW t-stat	WTK t-stat	WTT t-stat
End-user-tool systems	4.5	0.71	4.2	8.4**	6.9**	15.6**
1. Word processing	5.9	No				
2. Presentation software	2.8	Yes				
3. Electronic mail	5.6	Yes				
4. External legal databases	4.7	Yes				
5. End user tools for lawyers	3.8	Yes				
Who-knows-what systems	3.0	0.72	2.8		-3.2**	7.4**
1. Groupware for cooperation	2.8	Yes				
2. The firm's intranet	3.9	No				
3. The firm's own web pages on the Internet	2.8	Yes				
4. Internal standards database	2.8	Yes				
5. Systems providing information about knowledge	2.9	Yes				
What-they-know systems	3.1	0.80	3.1			10.4**
1. Groupware for knowledge	2.9	Yes				
2. Database with client cases	3.0	Yes				
3. Database with best practices	2.4	Yes				
4. Document system	4.6	Yes				
5. Systems providing information based on knowledge	3.2	Yes				
What-they-think systems	1.5	0.85	1.5			
1. Expert system	1.8	Yes				
2. Neural network system	1.3	Yes				
3. Intelligent agent	1.4	Yes				
4. Case-based reasoning system	1.5	Yes				
5. Systems solving knowledge problems for lawyers	1.5	Yes				

*Figure 4: Use of KMT at Stages of Growth (significance of $p < .01$ when **)*

In Figure 4, the reliability of each multiple item scale in terms of Cronbach's Alpha was calculated. To achieve acceptable reliability for the two first scales, "word processing" (marked No) and "the firm's intranet" (marked No) had to be deleted respectively. Those items were high use items, reducing the average score for each scale as listed in the revised column for use.

Statistical difference test in terms of the t-test was applied to evaluate whether responding law firms report significant differences between stages. As indicated in the column WKW (who-knows-what), WTK (what-they-know) and WTT (what-they-think), all four levels are significantly different from each other. The surprise, however, is that the significant difference between WKW and WTK is opposite to the stage hypothesis, suggesting that who-knows-what systems are at a higher stage than what-they-know systems. However, this empirical result can only be considered a preliminary test of the stage hypothesis as discussed below.

In the fifth part of the questionnaire, type of stage was measured by asking respondents to place a check mark beside one of the four descriptions of the types of stage. Figure 5 shows the number of responding firms currently operating at each stage of growth. Stage I of end-user-tools systems occur most often, followed by Stage III of what-they-know systems.

Stage of Growth	Number	Percent
End-user-tools	26	55
Who-knows-what	6	13
What-they-know	10	21
How-they-think	5	11
Total	47	100

Figure 5: Distribution of Stages of Growth

Figure 6 shows the various paths of evolution reported by the respondent firms based on the sixth part of the survey. As expected, most of the firms reported no path of evolution as end-user-tools was the dominating stage in Figure 18.

The theoretical problem of Stage II versus Stage III is confirmed here, as many (6) firms reported direct evolution from Stage I (end-user-tools) to Stage III (what-they-know). Also, two firms reported reciprocal evolution from Stage III (what-they-know) to Stage II (who-knows-what). There could have been other potential paths than those listed in Figure 6, but respondents indicated no such paths.

Paths of Evolution	Number	Percent
End-user-tools	16	34
End-user-tools to who-knows-what	3	6
End-user-tools to who-knows-what to what-they-know	4	9
End-user-tools to who-knows-what to what-they-know to how-they-think	6	13
End-user-tools to who-knows-what to how-they-think	1	2
End-user-tools to what-they-know	6	13
What-they-know to who-knows-what (reciprocal)	2	4
No response	9	19
Total	47	100

Figure 6: Paths of Evolution

Overall, these results validate the notion of evolution through stages as 20 responses indicate evolution through stages, while only 2 responses indicate reciprocal evolution and 16 responses may indicate that they have not yet started on their evolution.

In the third part of the survey benchmark variables for stages of growth were measured. Benchmark variables constitute the most useful way of assessing the stages since these variables are defined in specific terms that are different for the various stages (King and Teo 1997). Figure 7 shows the mean values of benchmark variables at each stage of growth for knowledge management technology in law firms. Ideally, if there is perfect fit between the values of benchmark variables and the stages of growth, the mean value for Stage I would be 1.0, Stage II would be 2.0, etc. Some deviations from the ideal mean should be expected. However, the mean values in

Figure 7 are not only deviations from the ideal, they simply show that there is no support for stages of growth suggested by the benchmark variables. None of the benchmark variables show cumulative numbers as suggested by the Stages of Growth model.

No.	Benchmark Variable	Stage I	Stage II	Stage III	Stage IV
		END USER TOOLS	WHO KNOWS WHAT	WHAT THEY THINK	HOW THEY THINK
1	Main purpose	2.15	2.17	2.20	2.00
2	Contribution of IT function	2.34	1.83	2.20	2.60
3	Role of IT manager	1.73	1.50	2.10	1.80
4	Performance of IT function	1.50	1.00	1.90	2.00
5	Trigger of IT for KM	2.19	2.33	2.50	2.40
6	Top management's participation	3.08	2.17	2.00	2.00
7	User participation	2.85	2.83	1.90	2.20
8	IT manager's participation	2.92	2.67	2.20	1.60
9	Principal contribution	2.50	2.00	2.80	3.00
10	Technology assessment	2.50	2.17	1.70	2.20

Figure 7: Mean Value of Benchmark Variables at each Stage of Growth

The negative result for benchmark variables found in Figure 7 are not so much a problem of the Stages of Growth model as such, as it is the selection of items for the benchmark variables that was false. For example, it makes sense from a theoretical point of view to classify the role of the IT manager as technology expert, functional administrator, resource manager, and knowledge management expert respectively for the stages I to IV. However, responding firms report that the IT manager is a functional administrator (and sometimes technology expert) independent of stage of growth for knowledge management technology in the firm.

The stage hypothesis suggests that law firms at higher stages will apply more advanced information technology than law firms at lower stages. In Figure 8 the extent of use of information technology at each stage is indicated on a scale from 1 (little extent) to 6 (great extent). The classification of firms at each stage is based on the numbers in Figure 8.

	End-user-tools systems	Who-knows-what systems	What-they-know systems	What-they-think systems
Firms at Stage I	4.09	2.67	2.73	1.45
Firms at Stage II	4.50	2.67	2.90	1.32
Firms at Stage III	5.40	5.40	5.00	2.00
Firms at Stage IV	3.84	3.28	3.72	2.30
ANOVA	2.76	5.76**	5.55**	1.52

Figure 8: Extent of KMT Use for Firms at different Stages of Growth (significance of $p < .01$ when **)

The analysis of variance (ANOVA) indicates that firms differ significantly from each other concerning who-knows-what systems and what-they-know systems as indicated by significant F-values in Figure 8.

Hypothesis testing was carried out using t-statistics to identify the extent to which law firms at higher stages apply more advanced information technology than law firms at lower stages. Results are listed in Figure 9. Only 3 out of 14 comparisons are significant. Therefore, we can conclude that the hypothesis is only marginally supported based on survey data from Australian law firms.

	WKW t-stat	WTK t-stat	WTT t-stat
Stage II versus Stage I	-.01	.35	-.36
Stage III versus Stage I	3.88**	3.96**	.01
Stage IV versus Stage I	1.27	1.78	1.79
Stage III versus Stage II		3.19**	.49
Stage IV versus Stage II		1.19	1.41
Stage IV versus Stage III			1.51

*Figure 9: Differences between Firms at Higher and Lower Stages of Growth (significance of $p < .01$ when **)*

It is interesting to note in Figure 9 that all significant results are found for Stage III firms. Most firms in the survey were either at Stage I (26 firms) or Stage III (10 firms).

As there were no significant differences between values for benchmark variables for firms at different stages of growth, this result is in line with critics of stages of growth models and sceptics of Guttman scaling who argue that it is close to impossible to find items that fit a cumulative and one-dimensional pattern.

In the seventh and final part of the survey instrument, knowledge-sharing perceptions, reward perceptions, support for personal development, as well as appraisal perceptions were measured. Although no specific research hypothesis was formulated, a proposition implies that higher stages of growth will have higher knowledge-sharing perceptions and higher reward perceptions. Average scores from 1 (little extent) to 6 (great extent) for firms at each stage are listed in Figure 10.

Knowledge-Sharing Perceptions and Reward Attitudes	Stage I Firms	Stage II Firms	Stage III Firms	Stage IV Firms
Lawyers are encouraged to share with others what they have learned from their recent assignments	3.8	4.0	5.3	3.4
Senior staff are too busy to reflect on their experiences and share them	4.3	3.3	3.5	2.8
The firm has a well-organised system for sharing knowledge (e.g. about clients, managing projects, new approaches) within departments or practice areas	2.8	2.7	4.7	3.0
The firm has a well-organised system for sharing knowledge (e.g. about clients, managing projects, new approaches) across departments or practice areas	2.4	2.5	4.2	3.0
There is an expectation that lawyers or their teams will have to take a regular turn to provide a reflection on learning experiences	2.2	2.5	4.3	3.2
Sharing knowledge systematically is part of the firm's culture	2.7	2.5	4.5	3.6
Lawyer salary increases in the firm are based on ability and how well he/she does his/her work	5.0	4.8	4.7	4.2
Promotion of a lawyer in the firm is based on ability and how well he/she does his/her work	5.0	4.8	4.8	5.2
Lawyers are fairly rewarded for the amount of effort they put in	5.0	4.8	4.6	5.2
The interest of the work lawyers do compensates for long hours and a stressful workload	3.2	3.4	3.7	2.8
The team as a whole is rewarded for good work	3.3	3.5	3.7	3.4
Teamwork in this firm is fully recognised and rewarded	3.3	3.5	4.3	3.6

Figure 10: Knowledge-Sharing Perceptions and Reward Attitudes for Firms at different Stages of Growth

Stage III firms stand out concerning knowledge-sharing perceptions. These firms have currently projects for information technology to support knowledge management that store information from lawyers. Lawyers in these firms are encouraged to share with others what they have learned from their recent assignments (score 5.3), and each firm has a well-organised system for sharing knowledge (e.g. about clients, managing projects, new approaches) within departments or practice areas (score 4.7).

Stage I firms stand out concerning reward attitudes. These firms have currently projects for information technology to support knowledge management that make end-user tools available to lawyers. Lawyer salary increases in these firms are based on ability and how well he/she does his/her work (score 5.0), promotion of a lawyer in the firm is based on ability and how well he/she does his/her work (score 5.0), and lawyers are fairly rewarded for the amount of effort they put in (score 5.0).

Overall, there seem to be two main groups of law firms in Australia. The largest group is concerned with providing lawyers with end-user tools and rewarding them on an individual basis. The second largest group is concerned with storing information from legal work and stimulating knowledge sharing in the firm.

FUTURE RESEARCH

Our research presented in this paper has potential for both theoretical and empirical improvements. From a theoretical point of view, links between stages and use of IT have to be improved. As well, new benchmark variables have to be identified and tested.

From an empirical point of view, there seems to be a discrepancy between what we are seeking to prove and what our research method (a survey) is able to deliver. We claim that it is necessary to demonstrate that transitions occur through the stages. In other words, we need also empirically to demonstrate (using descriptive statistics) that most firms evolve in the general direction from end-user-tools to who-knows-what to what-they-know to how-they-think. But since we used a survey (which is a snapshot of people's views at one point in time), we obtained very little data on firms moving through stages. Most of the firms reported no path of evolution. One way to obtain such data will be to undertake a longitudinal study or at least to survey them at year X, and then to survey them later at year Y. The two surveys taken at different points in time will give us the data to see if firms have indeed moved through the stages over time.

CONCLUSION

A Stages of Growth model is proposed to understand the stage at which a law firm is found concerning applications of information technology in knowledge management. Four stages are defined, and a law firm can use the model to develop a strategy for implementing technology at higher stages in the model.

A survey of law firms in Australia resulted in firms at different stages. While current projects in most firms were concerned with end-user tools (Stage I), some firms were at the Stage II of storing information about who knows what, some firms were at the Stage III of storing what they know, and some firms were at the Stage IV of implementing systems solving knowledge problems.

The stage hypothesis suggests that law firms at higher stages will apply more advanced information technology than law firms at lower stages. Based on responses from Australian law firms, this stage hypothesis found only marginal support.

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