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Establishing the return on investment for information and knowledge services

A practical approach to show added value for information and knowledge centres, corporate libraries and documentation centres

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'Being good at what you do and at the services you provide is no longer good enough.'

Abstract

It is vital that information managers are able to demonstrate the added value of information and knowledge services for their organizations. Establishing the Return on Investment (ROI) of these services requires a clear understanding of the basic structure of intellectual capital and, when communicated, an ROI can provide further evidence of the strategically important role played by information managers in the business models of their organizations. The research that takes place to establish the estimate of the ROI is based on identifying and surveying knowledge workers, using a mix of questionnaires and in-depth interviews. By outlining a five-step approach we show how a map can be made of an organization's information environment and how this can be used to measure returns in specific values, differentiated over all areas of an organization's activity. A structured approach is described to derive the final valuation of the information and knowledge services, and their management, using the themes of quality, character, management style, and shelf life. We also show how to develop a marketing and communication plan for information and knowledge services, and the role this plays in providing evidence of ROI. The importance of information managers clearly understanding the

core processes of their organization and its key steps is emphasized, and an explanation given on how to identify the benefits that information and knowledge can bring to these processes. We also show how benchmarking is used in ROI and how an information department can monitor its client base. Finally, we describe how to prepare an ROI plan of action.

Keywords: corporate library, information service, knowledge service, measurement, research, return on investment, value for money

Introduction – the importance of demonstrating a return on investment (ROI) for information and knowledge services

Information managers who can demonstrate added value in a professional, structured and impactful way will be recognized and valued for the services provided, and will get the allocated resources and budgets necessary to enable their organizations to achieve business goals.

However, many appear to lack the confidence, tools and techniques to discuss and demonstrate the added value they deliver to their organizations, and continue to operate in a traditional demand-driven way. Service and performance is often monitored and measured via a service level agreement and, not surprisingly, this reactive approach to service provision can result in an information centre and its staff being viewed by their organization as an 'overhead' to cut, rather than as an essential and strategic business 'asset' to value (see Figure 1).

Being good at what you do and at the services you provide is no longer good enough. Very good information centres will be cut, and may be outsourced or offshored, not because of their inability to provide good services, but because of their inability to demonstrate an ROI or provide evidence of the impact they make on their organizations.

This article provides an introduction to the way in which the authors have established the Return on Investment (ROI) for information centres for public and private sector clients, and gives an insight into the ROI courses run at TFPL by the authors for information professionals.

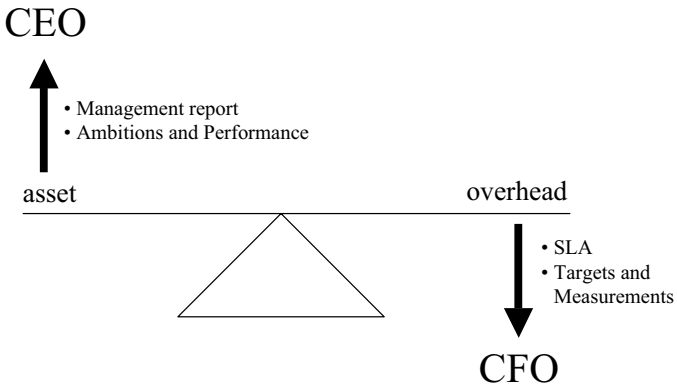


Figure 1 – The choice of being an asset or an overhead has important implications

The pressure to measure – the importance of measuring intangibles

Increasingly, we work in knowledge-based organizations and in business environments where knowledge industries (services) are growing and manufacturing industries (raw materials and goods) are declining. These changes have resulted in a growth in the use by organizations of information and knowledge management tools and techniques, and an increasing importance being placed on non-financial and intangible measures. It used to be sufficient for organizations to measure inputs and outputs; while these traditional (tangible) measures are still important, new metrics are required to meet the changing business environment. Organizations and their key stakeholders are demanding measures and metrics for outcomes and impact (intangibles). Much has been written on the 'knowledge economy' and the evolving approaches to measuring intangibles and intellectual capital, including the need to present a rounded or balanced view of tangible and intangible measures. Information managers need to be aware of the variety of models available and the applicability of these models, along with the more traditional methods, to their organizations' business drivers and goals.

To begin, start at the end – aligning services with strategy

Connecting information services with organizational goals

Strategic alignment should be a key business driver for information managers. It concerns the alignment of the objectives of all organizational units in a direction that supports the overall strategy of that organization. In the past, many information service departments planned and designed their objectives and services in a silo, and did not take account of the need to demonstrably align with wider organizational goals. Now times have changed and the advantages of alignment (evidencing a 'golden thread' or 'line of sight') are clear for everybody. The business demand for strategic alignment provides an excellent opportunity for information managers to realign their department's objectives to the overarching company goals, using ROI tools and techniques as a vehicle for this change.

The structure of intellectual capital and intangible value

Working on the ROI for information and knowledge services requires a clear understanding of the basic structure of intellectual capital and related intangible value. It is widely accepted that intellectual capital consists of both human and structural capital (see Figure 2).

Human capital consists of knowledge workers; it is thinking capital that cannot be owned by an organization. Thinking capital moves jobs, resigns, is often not shared, sometimes falls ill, and will leave the organization every evening. Structural capital is made up of information, including records, processes, agreements, patents and databases. It is non-thinking capital, it can be owned and remains behind when knowledge workers (thinking capital) go home. A (too) general rule of thumb is that on average, intellectual capital consists of 80 per cent human capital and 20 per cent structural capital. If an information manager wants to manage intellectual capital it is not just a matter of managing one of the two sub-categories, but of managing the interaction, interface, flow and dynamics between the human and structural capital. When an information centre only focuses on increasing the dynamics of information, the value of the structural capital will improve by increasing the flow between knowledge workers and the information. In this situation an employee will find himself/herself in a more knowledgeable workplace environment, with more relevant information that adds value to day-to-day activities. The 'rule of thumb' 80–20 balance between the human and structural capital will become partly restored to a healthier 60–40 position. This is by no means the result of shrinking of human intellectual capacity, but solely of an upgrade of structural capital.

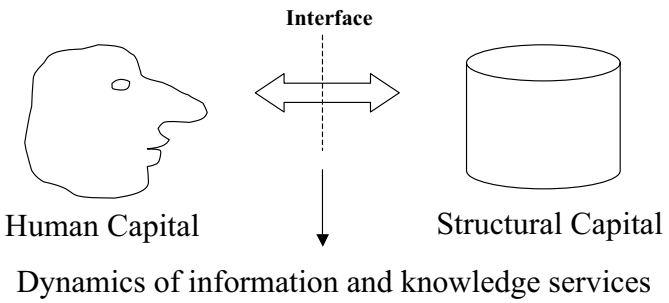


Figure 2 – The structure of intellectual capital

The role of information and knowledge services in the business model of your organization

Let us picture ourselves as an information service function which has the same structure as the client organization (see Figure 3 on page 16). We can identify three different relationships. There is the traditional person-to-person relationship, often used for simple information requests or for specialized questions. There is the direct access of the client to the sources made available via the information centre. Finally there is the relationship of the client with his/her own personalized portal, fed and supported by the information services function. These three relationships are shifting with the availability of new technology. For example, this means that fewer people are likely to visit their library to conduct research on developments in their areas of specialism, or on subjects of interest, when new technology can bring the information right to their place of work or research. What would happen if everybody received their day-to-day information and updates in a well-filtered and well-presented way on their personalized portals? Would this represent added value? The answer is yes, but only in part. The added value is there, but it is vague, general and not the differentiator that information managers should be

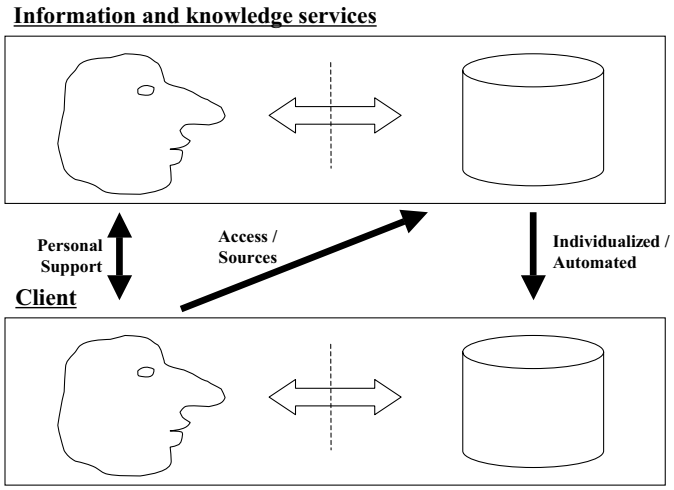


Figure 3 – The three different relationships of information and knowledge services within an organization

looking for. The added value should be measured by asking people what they would lose if the portal service were stopped. This has particular impact if they are able to express it in terms of loss of business or an inability to meet a client's requirements. Further, they need to be able to use the information provided in efficient and effective ways. The organization's capability of finding the right information must be a key part of the information manager's responsibility.

In many organizations the library or information centre remains empty with only a very limited number of employees physically 'stepping through that door'. This is happening in large corporations and governmental organizations alike and staff available to give personal assistance have diverted their tasks into technology-supporting information supply.

In several of the ROI studies we have recently completed we have noticed a very different approach. In these 'best practice' examples, information professionals were very proactive when engaging in information opportunities, and their mindset was more one of an internal consultant, coach or adviser than of a service provider. They also had a good overview of the project pipeline in their organizations, and a clear understanding of the core business processes. This is leading to a much higher expectation, now that library researchers will be able to analyse, synthesize and present (Boyd, 2004).

Let us for example look at the generic process of policy-making in an organization. Four simple steps occur. The first is the concurrent process of orientation in the specialist fields of every individual professional. The three main policy steps are: selection (of information), creation (of the policy), and publication – including communication (see Figure 4). The moment a ministerial decision was made that a policy was going to be created, a period of selection started in which the most appropriate information was selected. Once we investigated the average length of the selection period we were able to measure the impact on the lead time of that phase by facilitating the start-up of the project with targeted information. Information professionals became physically involved during the start-up of the project. Once we started to look seriously at the next

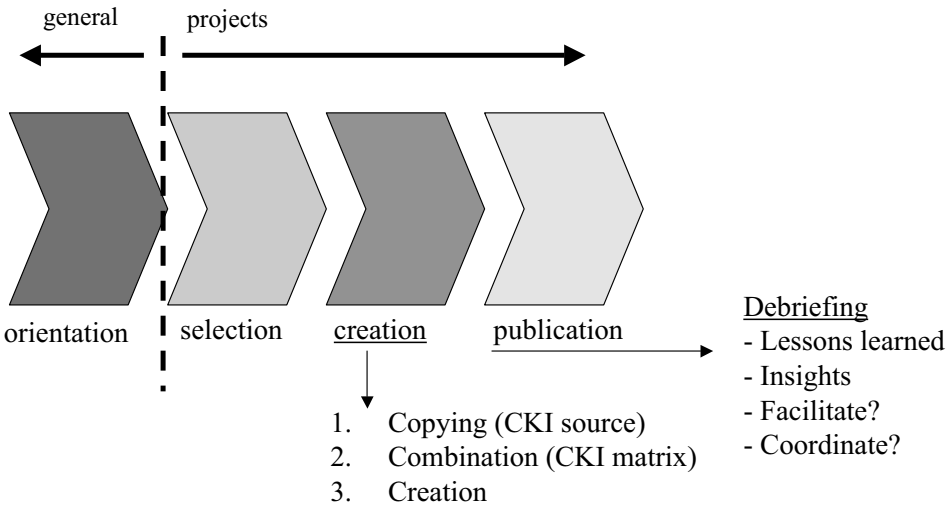


Figure 4 – A simplified process for policymaking

two steps it appeared that these played an important role as well, with considerable potential for added value. The creation step was expected to be the sole ground of the specialized knowledge of workers/policy makers. When we analysed the step to understand better what policymakers really do during creation, we actually came to three different activities.

1 Copying, in which the information centre plays an important role as source.

2 Combining, in which the information centre delivers a related matrix with content.

3 Creation, the key activity left for the policymaker to do.

Finally there is the stage of publication. In this step, once the publication is finalized, important secondary documentation is captured and disclosed as lessons learned and insights gained in the process. One can question whether it is the role of the information manager to coordinate the debriefing process and to capture lessons learned and insights. He/she should at least be expected to monitor the debriefing activities and actively collect the captured material.

Developing a marketing and communication plan for information services

Communication, communication, communication: in today's business environment, being good at what you do and at the services you provide is no longer good enough. Very good information centres will be cut and maybe outsourced or off-shored, not because of their inability to provide good services, but because of their inability to demonstrate an ROI and provide evidence of the impact they have on their organizations. Key to evidencing this impact is having a marketing and communication plan for your information services. While information managers can research and prepare such a plan, based on best practice and advice from internal support functions, we suggest the following approach to help unpick the essentials of demonstrating the impact and value-add of information services.

Information managers and their teams should ask of themselves and their services:

- What result are we trying to achieve?
- What knowledge and information do we need to achieve the result?
- What are the options for demonstrating and evidencing our services and value-add?
- How do our internal customers describe our services in terms of brand and brand values?
- What should our brand and brand values be, and have we the right 'elevator speeches' to communicate this ambition clearly and effectively to our target audiences?
- How do we best describe the value and value-adds of the services we provide?
- How do we measure customer perception of our services and plan to address any deficiencies in this area?

The above approach is also recommended at a service level: for example, taking a key service provided and creating an 'impact sheet' for it. This simply means a 'one side of A4' document or table that describes the service being provided, its alignment to company strategy and goals, ways in which the service can be demonstrated to users, ways in which it impacts on the organization, its value and value-add, how performance of the service will be measured, and by whom.

Information managers and their teams should also be aware of the numerous communication channels that can be exploited to get their message across to target audiences. There are pros and cons to using each channel and it is important to select the right one to ensure that the intended impact is made. Selection of the wrong or inappropriate channel can lead to the communication having either a negative or unintended impact. For example, using email, sending documents, or publishing to an intranet, while quick and efficient, are no guarantee that the communication will be read and understood. Further, these channels lead to little buy-in by the recipient as they are at the 'tell' end of a communication spectrum. On the other hand, while voice and face-to-face meetings are at the 'consult' end of the spectrum, and provide the opportunity for questions, clarity and context, they can be more time consuming. Thinking about the channel and communication vehicle options, before acting, is a process step that information managers should consider embedding into their marketing and communication plans.

Risk management

All organizations are concerned with risk and larger organizations often have bespoke risk management programmes, focused on their specific market or business environment. The subject and type of risk being managed changes over time, with the traditional 'tangible' risks moving down the order of importance and being replaced by less tangible risks, including reputation, image and uncertainty. In order to establish the ROI on information management it is vital that information managers get connected to the risk management programme of their organization. Risk management deals with the identification and mitigation of risks; well-informed decision makers make fewer mistakes, and the connection between the services of the information department and risk reduction can provide the information department with a strategically important and recognized value-add within their area of responsibility.

Identifying knowledge workers – those relevant and not relevant for ROI

Mapping the current clients and potential information users

Who are your potential clients? Who are your clients today – and why? If the answer to the first question is 'everybody', then the answer to the second is 'I don't know'! As an information manager you should group the users of your services into a few categories, to identify those relevant and those not relevant to ROI (see Figure 5 on page 19). An example of a logical grouping is given below:

- Employees who follow strict instructions and use information for their own benefit only.
- Employees who receive instructions and apply these given the context of the application. These employees not only use information for their own benefit, but also to colour the context in which they work.
- Employees who have to combine sources of information in order to be able to fulfil their task. Interpretation and choices made depend very much on the quality, reliability and timeliness of the information provided.
- Employees who not only have to find information in several sources and combine these, but also seek consultation before drawing conclusions that influence their work.

All these employees can be clients of the information department, but it is fair to say that only the latter two categories will experience real added value in the use of information services. To establish the ROI it is important to find out what percentage of employees fit in these last two categories and use them for the interpretation of the results of your research.

There is a certain status associated with being a knowledge or information worker, and estimates can easily be too high. A large insurance company claimed at the start of our ROI project to have mainly knowledge workers in its organization. We estimated the number to be only 15 per cent. Over time roles that are designated 'knowledge worker' tasks will become (semi) automated by improved systems so that the level of added value delivered by information services will decrease over time. This means that this mapping is often only valid for a limited time. However, knowledge workers do move on to new projects or responsibilities, so that their numbers remain stable and the ROI calculations over time will not become influenced.

Mapping the information environment and sketching the information architecture

Mapping your organization for information management is very literally a mapping exercise, with a physical overview as the result, showing very clearly where and with whom different relationships exist, and towards what added value (see Figure 6 on page 20). The entire mapping exercise consists of five steps:

Step 1: Place in the centre of a sheet of paper the library or information/knowledge centre and draw a large outline representing the border of your organization.

Step 2: Divide the paper into quarters and number them clockwise 1 to 4. The right half (1 and 2) is for departments involved in the core processes of your

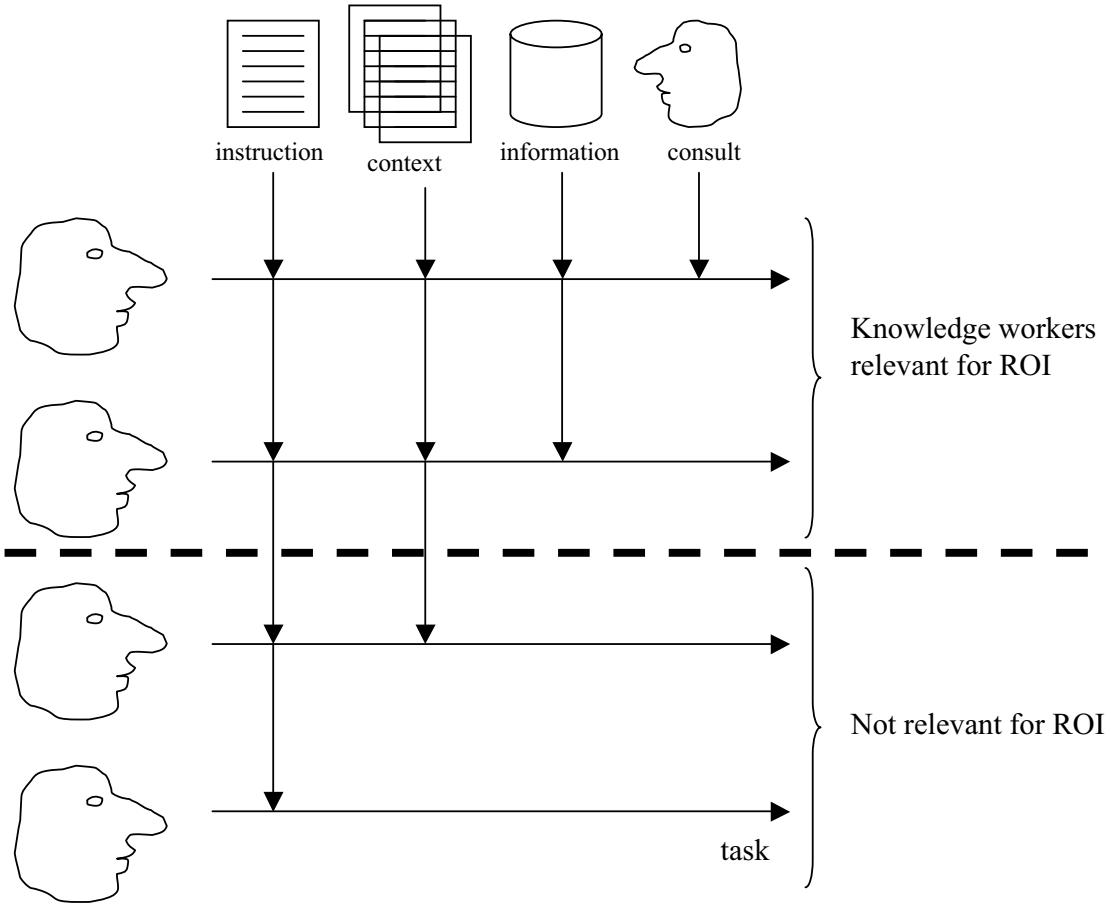


Figure 5 – Establishing who are the knowledge workers that are relevant for ROI

organization, or/and directly in communication with the outside world. The left half (3 and 4) is for internal support of the organization.

Step 3: Divide the first quarter into two equal sections representing – 1a: the end of the value chain/the interface with the client or end user, for example sales, consultants or lawyers; and 1b: the core processes, for example production. The second quarter is for departments with direct communication or connection with the outside world such as marketing or PR.

Step 4: Divide the left half into a third quarter covering special projects for the internal organization, such as risk management or quality management;, and the fourth quarter covering supporting departments such as Human Resources and IT.

Step 5: Connect the library to all departments, entities or projects with which you are professionally connected, and do your organizational research among the knowledge workers by targeting each quarter with specific questions, measuring the returns in their specific values.

Examples:

1a: In a sales organization, the percentage of salespeople experiencing a positive influence on the sales process as a result of information received, representing a total sales figure of £. . . , equal to £. . . as the value of the information supplied.

1b: In a factory, an innovation project in a production unit, giving credits for quality and time gained, valued in total at £. . . , equal to the positive contribution of timely and relevant information and knowledge sources.

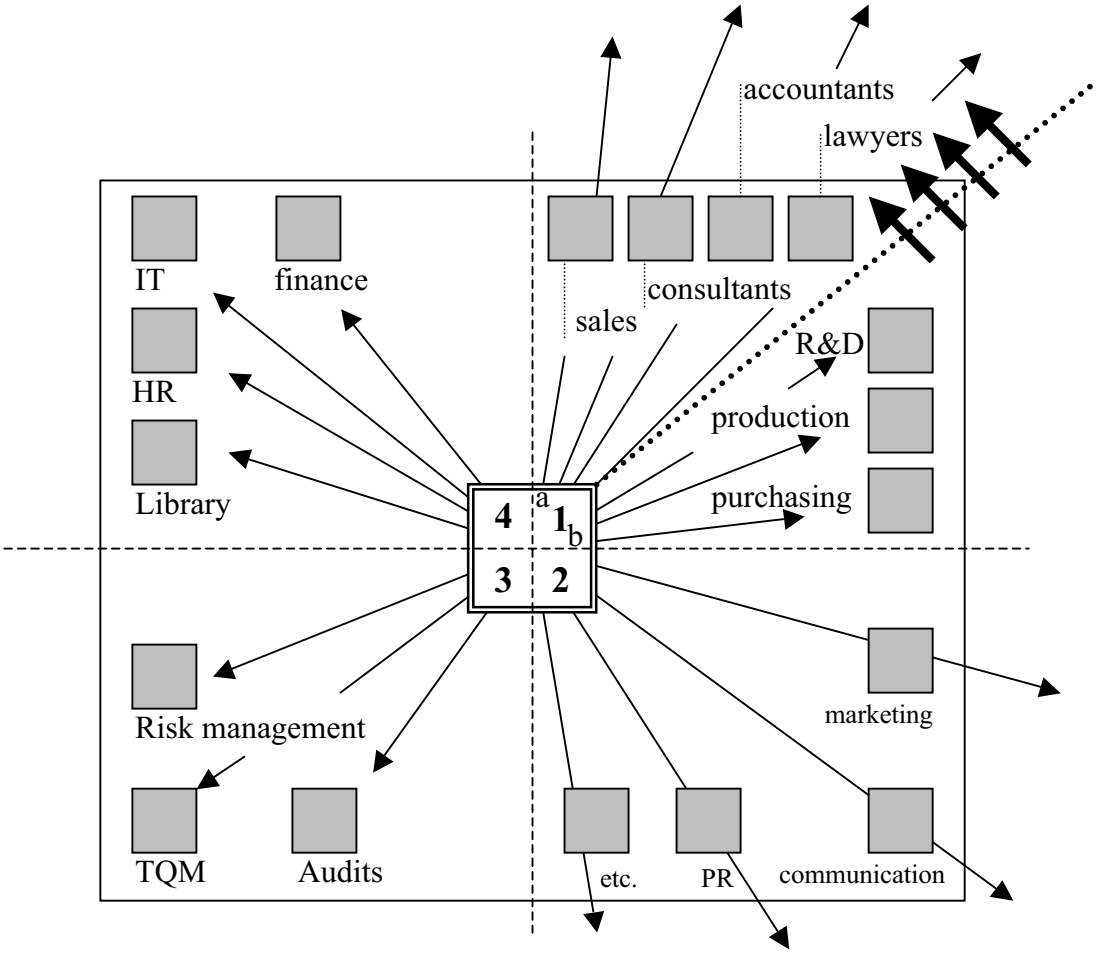


Figure 6 – General ROI map for a corporate environment

2: A marketing department of a large multinational experiencing a shortening in time by *x* weeks of a market orientation project, leading to an earlier market introduction of as many weeks, valued in sales at £. . . , thanks to the involvement of information managers.

3: The risk manager of an insurance company claiming that risks connected with poorly informed decision makers were reduced by *y* per cent, valued at £. . . , thanks to better information.

4: The Human Resources department of a pharmaceutical company experiencing improved training services resulting from a closer match with new demand in the market, valued at £. . . , equal to the value of market information received.

The importance of research – understanding customers and clients

The valuation of library and information services is an assessment by users of the quality of interactions with them and the benefits of the results of these interactions (Saracevic and Kantor, 1997). Once information managers start researching their organizations they suddenly find themselves seeing a completely 'new' organization, as if the 'silo walls' have fallen away. Many of the information centres we have helped have gone on to complete organizational research, only to be surprised by the response from their clients. Comments like 'I didn't know you facilitated these sorts of services', 'I thought you were just a library' or

'Why didn't we know this earlier, because last month . . .?' were not uncommon. So let's look at the steps that need to be taken in setting up this research. In the third quarter of the ROI-map, 'audits' are mentioned as special projects. These could take the form of an information audit. It is TFPL's vision that an information audit can be seen as a vehicle to identify and quantify information needs to meet organizational targets (DiMattia and Blumenstein, 2000).

Setting up organizational research – timing and plan of action

Information managers who make up research questions behind their desks are in danger of designing a flawed or misunderstood questionnaire. In our experience, and before doing anything else, we encourage managers to first identify a limited member of key clients (representing different areas of activity) with whom to meet individually for a brainstorming session or in-depth interview. The interview is not to establish the best questions to be asked, but to find out the individual's use of your services and the potential improvement and benefits that could be gained from improved information services. The outcome of the interview will give clear clues on the questions to bring into the survey. This means that good research will never be based on a survey that has a 'one-size fits all' approach. On the contrary, each area of activity will be in alignment with the ROI map, and have its own version.

Invitation and questionnaire structure

Using email to invite people to complete a questionnaire is not your best option. The best option is a paper-based personal invitation explaining that the respondent was hand picked, and that the questions are tailor-made for his/her part of the organization. It is important that you explain in the invitation your ambition in completing this research, and the maximum time involved in filling in the questionnaire. You should ensure that this never exceeds 20 minutes. The questionnaire itself must be electronic. It is our experience that paper questionnaires have a very low response rate, averaging 10 per cent. An electronic questionnaire can have a response rate of around 50 per cent, when the personal invitation was issued on paper and the questions are relevant to and targeted at the respondent's business activity.

The structure of the questionnaire should be simple and straightforward to complete. It should start off by repeating the ambition of the survey and the maximum time involved in completing it. If possible, try to avoid making the responses anonymous: it is important to be able to identify certain input; the information needed is not confidential; and the reply rate for a non-anonymous survey based on a personal invitation is simply higher. The questionnaire must start with the bulk of the questions in multiple-choice (70–80 per cent). Next, 10–20 per cent of the questions must ask for statistics or percentages. Finally, 10 per cent can be open questions. These always must be positioned at the end and stated as being extra, so that the risk of incomplete questionnaires is limited.

Once all the questionnaires have been returned and analysed it is time to do a second and limited number of in-depth interviews, to clarify and validate your interpretations and to explore responses in more detail. The number of interviews will be the same as in the start-up phase, but we are probably looking for different candidates. A suggested representative sample to use would be between 5 per cent and 10 per cent of the knowledge workers.

Once you have measured key elements as exactly and realistically possible, there is a tendency to make the mistake of extrapolating the results over too wide an area of the organization. If you overemphasize the results in one area, all your calculations will be called into question. Normally the added value will already be impressive simply when you add all the realistic results from your users in the first quarter of Figure 6 for the first time.

Understanding the core processes of an organization and their key steps

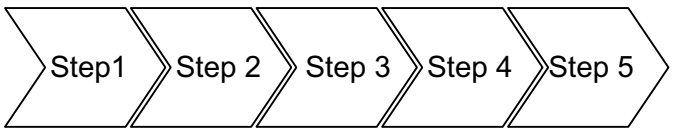
It is vital that information managers have a good grasp of the core processes of their organizations and a clear understanding of the knowledge and information flows (tacit, implicit and explicit) along the key steps. Often business process are mapped and published, and policies and procedures written, to guide employees through day-to-day business processes. These pieces of information and documentation are then 'filed' and employees left to navigate their own way through the business processes, often via workarounds and

learning while doing. A proactive and engaged information manager will recognize this, and will have a plan to regularly update a schematic of their organization's core processes with the knowledge and information flows that develop and change over time, and also to map the gaps and overlaps, where information services can add further value or be further streamlined.

Identifying the benefits that information can make in these processes

Mapping information gaps and overlaps against business processes has a number of benefits. Firstly, information managers can talk with more confidence and authority to business colleagues about the information services provided, and how and where they support key business processes. Secondly, information managers will be able to take an overview of user take-up and the level to which the information services are embedded in business processes. Thirdly, they will be able to identify where information gaps exist (and how to fill them) and where overlaps or duplication of effort/resource exists (and how to address this).

A simplified core process schematic is shown in Figure 7. Information managers, working with business colleagues, should have a plan to regularly update the schematic by asking and answering the suggested 'knowledge and information' questions shown for each and every key step of the process. A prioritized action plan should then be drawn up to address the information improvement opportunities identified and to put in place the measures (tangible and intangible) to provide evidence of the business/process improvement achieved.



Knowledge and information flow questions include

1. **What types of knowledge/information do you need to complete each step?**
2. **How easy/difficult is it to obtain?**
3. **How could access be improved or facilitated?**
4. **Who are the knowledge and information experts for each step?**
5. **Are there any knowledge/information gaps or overlaps?**
6. **If the flow and access of knowledge and information at each step could be improved, what business benefits would be derived?**

Figure 7 – Process steps and key questions

Benchmarking

Benchmarking ROI approaches, tools and techniques is a good way to learn from others in order to improve your own performance and impact. For benchmarking to add real value, the organizations concerned must have built a relationship and a level of trust and respect in the veracity of what is being shared. Certain topics or types of information would normally be 'ring-fenced' to prevent the sharing of either competitive or commercially sensitive data. Many organizations will attempt to benchmark against peer or like organizations. While beneficial, an alternative approach is to segment the elements of your information service and benchmark them individually against the best in class – for example the best service provider, product or process specialist. A further example would be to try to understand and monitor your client base. It might be better to benchmark against a marketing or customer relationship management specialist organization to gain a wider range of insights and ideas than might be forthcoming from another information service department in a similar organization. Clearly, the plans for benchmarking, reporting on findings and recommendations for resulting actions, should form a key part of an information service's communication plan.

Monitoring the client base

It is vital for any organization or department/service within an organization to monitor its client base, in order to further understand the impact and value-add of the services and products being provided. For information service managers this is particularly important, as often their function is one or two steps removed from the end customer or 'real' client. It is therefore necessary to not only understand how the services and products are being received and used by internal clients, but also how these internal clients use the services and products when doing business with the 'real' client. This thinking is often best expressed in terms of a flow chart or diagram that information managers can use to demonstrate the 'handover' points of this value chain, and to understand how information and knowledge flows up and down the chain. Proactive information managers will schedule regular feedback sessions with externally facing colleagues to capture the hints, tips and thinking of end customers or 'real' clients.

Establishing the value

If we think of added value in terms of simple building blocks it will be easier to define. Each and every industry will have its own set of building blocks, so what we present here is a very general high-level structure.

There are four main headings in the structure of information or knowledge: quality; character; management style; and shelf life.

Let's first look at the quality. The most common terms we have come across in our work include: reliability, availability, access, freshness, cost, findability, completeness, precision and relevance. Clearly, the terms and definitions depend on the organization and its professional vocabulary. As stated earlier, the choice of terms used is very important for the final calculation of the ROI, because it differs importantly from one business to another. For this you need to determine, in each quarter of the ROI map (Figure 6), a prioritized level of terms relevant for their work.

The second heading in the structure is character of knowledge. This can be divided into explicit, implicit and silent knowledge. Each organization has its own culture and its own specific rules and disciplines, leading to a fixed ratio between the three. But it is fair to state that it is only fixed for a certain organizational culture at a given time. In our experience these ratios will shift depending on the attention and priority given to each by management. On the investment side of ROI we can state that explicit knowledge is easily managed, but efforts to make implicit knowledge explicit are costly and often not successful or rewarding. Silent knowledge is not accounted for in any system and might or might not appear by surprise when you need it. Organizations that give access to implicit knowledge simply by identifying the knowledge source will find that it becomes strongly used, with ongoing unforced knowledge sharing as the result. Trying to force implicit knowledge or experience to be made explicit often leads to resistance and, ultimately, to greater bodies of silent knowledge.

This is directly related to the third heading: the management style of information or knowledge management. This can be formal, informal or non-existent. A shift towards formality normally means an increase in corporate commitment on the investment side, with the result that changing attitudes and behaviour in response to that formality will raise the return.

The last heading is shelf life of knowledge and information. This differs dramatically, not only by organization, but also within one division or department, depending on the role and responsibility of the department. In the context of ROI, different shelf-lives obviously need to be handled in different ways. Often knowledge and information managers are unaware of shelf life in their client's setting, and are also unaware of the diminishing effects of a poor match between shelf life and differences in facilitation.

During the research, the results of good information and knowledge management, achieved via the four headings above, are often expressed in terms of increase in quality of output or gain in time. Simultaneously one can search for added value in the product itself, or in a supporting application. Respondents will find it more straightforward to express the return on information in recognizable units such as time, but when challenged it is our experience that they are also able to recognize the qualitative contribution made by information. It is important not to just sum all stated contributions, but also to analyse the responses so that you are able to extrapolate the findings over the area of relevance. However, a conservative rather than a linear approach should be taken.

In many organizations everything must have a financial tag, and the internal charging codes are frequently used to control cost and utilization. Some very successful libraries in multinational corporations are successful in pricing their services based not on costs, but on 'profit–value'. A good understanding of the added value of the corporate library services in the different activities of the organization, and a long tradition in measuring and registering observations, has brought the term profit-based pricing. For the internal clients this means that using the corporate library is a business decision if it is affordable and it is worth their while. The library is a profit centre and its role in the core processes of the organization is obvious and respected.

Finally, we come to the full calculation of the ROI. The importance of an ROI statement and value proposition for information services is recognized (Strous, 2003). Because of the complex structure of returns and their measures, locations in the value chain, appreciation by end-users and other factors, this will be a fair representation of the added value, expressed in a matrix of benefits experienced by the sum of the end-users. This should preferably be quantified in terms of money and 'man hours', less preferably in terms of

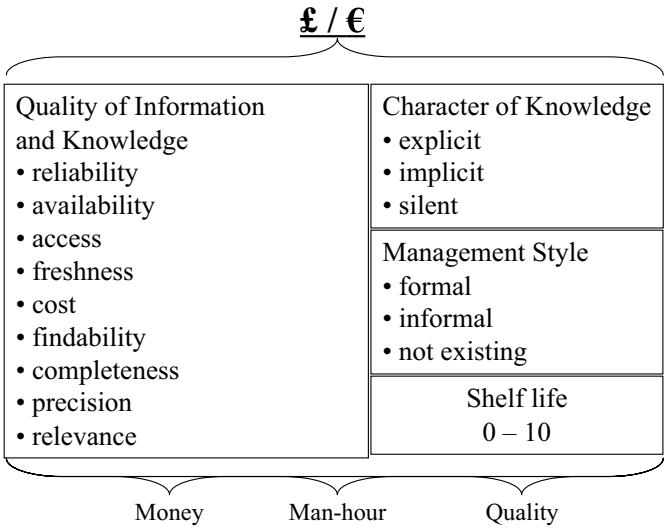


Figure 8

quality statements supported by percentages of end-users. The ROI matrix will have an order from the highest benefits first, determined by its structure of:

1 benefits expressed in money;

2 benefits expressed in 'man hours';

3 benefits expressed in qualities.

All three expressions must be converted to money values, so that despite the different types of input, one figure represents the entire effort (see Figure 8).

Making a plan of action

During your work establishing the ROI you will often find a current and a potential outcome. The gap between the current or 'as-is' ROI and the 'to-be' ROI can depend on many factors outside your control. However, an important reason for writing this article is to put information managers in control, so that you can show your organizations the added value of your input. Once you prove the ROI of your information services, investments are more likely to be approved. Once that has happened it is time to prepare a plan of action. Important in any plan is that you define a work-stream for each project. Each project should be phased over a timeline, and all timelines should be placed parallel to each other. In each project timeline you should show the obvious start and finish points, and divide each project into clear steps. Because this is an ROI plan of action you will also need to identify clearly when the project starts to generate any form of return, and when the return exceeds the costs.

Conclusions

- Showing added value via the establishment of the Return of Investment must be a top priority for information services in any organization.
- Information management should align its goals with organizational strategies.
- Active information services will find themselves positioned at the heart of the intellectual capital of their organizations, namely at the cross-point of knowledge and information flows, where intellectual capital depends on the dynamics of knowledge and information.
- The information professional should have a high level of understanding of the core processes of the client, and a general understanding of who the client's client is.
- Processing an ROI without communicating it is the same as not having done an ROI project at all. A good communication plan is the last but crucial step in the ROI.
- The ROI will be based on an information map, placing the information department and its services at the centre, and showing different relations with information end-users with different types of added value, based on different information flows.
- Risk management will provide information managers with a good understanding of the reduction of risks that will take place when decision makers and key knowledge workers are provided with the right knowledge and information.
- Research activities undertaken by the information department will result in the understanding necessary to establish the ROI, but will also greatly enhance the understanding by end-users in the organization of the information and knowledge services available to them.
- The result of an ROI study is a shortlist of added values, expressed in the different units of 'money',

time' and 'quality'. Finally, all three expressions must be converted to money so that, despite the variety of inputs, one figure represents the entire return on efforts in information and knowledge services.

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