Responsibilities for managing on information

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Accepted 15 February, 2011

Ineffective techniques for managing information cost companies millions every day. The information we have is frequently not what we want. The information we want is not always what we need. The information we need may not be available. The need to structure and manage information has been growing steadily over the last 50 years. Well-structured information is one of the most powerful tools that an organization has. Basic maintenance is necessary to keep the information architecture and knowledge contemporary, so gathering feedback and finding out how information really works in practice are vital maintenance task.

Key words: Information, responsibility, information architecture.

INTRODUCTION

Responsibilities for information must be carefully defined, if they are to make any difference. Ivan Shutte, speaking of the architecture experiences of Standard Bank of South Africa, asked his audience to remember that 'models do not solve problems, methodologies do not solve problems, tools do not solve problems – people solve problems, and I cannot emphasize how much the organization is essential to the success of this' (Ivan Shutte Information Frame Work Conference, 1994). The eight factors and the management tool kit derived from them are the foundation of any information architecture, but at the end of the day, it is people who make architecture a success by accepting and carrying out their responsibilities. A practical approach for assigning responsibilities to information is therefore critical, for sharing accountability for the information resource, securing the effective use of corporate information and ensuring that planned changes are carried out.

Responsibilities for views on information

It is widespread practice to assign ownership for a particular piece of information, for example to appoint the accounting department as owners of information about sales transactions. A better approach is to allocate responsibilities for a view on information, meaning that accountability is not directly for the information itself, but rather for a viewpoint or perspective, which allows for many different views on same information. This is better than defining a single owner because it permits difference of opinion and multiple uses for the same information. To illustrate this let us assume a very simple information architecture that only contains four categories of information, covering customer, product, sales transaction and invoice. The product manager is only responsible for maintaining accurate information about products, so from his view there is only one category of information. The accounting department record and track sales transactions and invoices, so their view covers two categories. The marketing department analyses customer, product and sales transaction information. The product manager and marketing department both have interest in product information, but the product manager needs information to show that a product can be manufactured at a cost below its sale price, while the marketing department is not concerned with manufacture costs but rather that the price appeals to the customer. The information categories are exactly the same in each case and the information covers complete needs of each stakeholder, but their separate 'views' are quite different.

A view identifies a set of information items, that have been selected for the stated purpose by a person or group of people. This is an important concept for architecting information. Responsibilities can be defined

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for individual data items, but they are more useful when they are applied to a group of information items that belong together, either because they are used for a common purpose or conceptually they feel right together. The number of information items within a given view ranges from a few to several hundred, depending on the context in which the information is being used; thus a critical, but isolated, decision may depend on three key pieces of information, while the process to establish a multimillion dollar loan for transnational corporation could depend on the interaction of more than 150 information items. So a view lists the information that is required in a given context, but equally important it explicitly records that purpose and it states who is responsible for the view. Information is used as the basis for defining responsibilities because it is:

1. Explicit – It is easily described, making it tangible and measurable.
2. Universal – it is required by everyone in the organization and is necessary for all decisions and actions.
3. Comprehensive – it can be used to reveal and record the view points and perspectives of all stakeholders.

Defining responsibilities in this way is about managing people through the use of information. Architecting organizational change falls apart if you do not have people to do it, they do not know what is required or when and they are unaware of the consequences of not doing it. Assigning responsibilities involves people by explicitly describing their commitments and motivates them by describing the purpose and use of the information, thus demonstrating benefit and value. An international bank ran three workshops to list, define and assign responsibilities for key performance indicators in corporate banking. Over the following 6 months more than 100 data sources were simplified to eight responsibilities for creating and sourcing information, use of information from an internal economist group tripled, while external information sources were cut by 38%. A map of key performance indicators increased sharing of that information from 4 to 68%.

The ultimate responsibility for information should lie with its users, not with information technology departments. If any of that responsibility is delegated to technical staff, then they should be directly accountable to the users. Some information architecture methodologies have a strong technical bias, and either ignore or pay lip service to an independent understanding of business requirements or the alignment of information systems with organizational needs. In my experience, around 40% of information system departments develop or apply information architecture with little or no involvement from users and by excluding business professionals, often alienate them. Melissa Cook said that 'the business community has been convicted that it cannot possibly understand information processing anymore', resulting in the delegation of information responsibilities to technologies. Architecture requires a deep understanding of business and managerial information needs, that requires the active participation of the business and management community. This technical bias forces an undue reliance on information technology for all of our information processing needs. A well-defined information architecture provides a comprehensive framework for managing and using information, that works both with and without technology. 'We need to stop waiting for technology to magically solve the human side of our commercial information processing problems. Without an information processing framework or architecture within which to apply them, faster processors are probably going to make things worse in the enterprise, not better' (Melissa, 1996, p. 6).

An information architecture based largely on technology is an incorrect analysis of the problem and results in an inability to solve it. It is important that the architecture is recognized as a benefit to both technical and business professionals, with both business and technical responsibilities and commitment. Although a specialists group may be put in charge of architecture, everyone must be involved in explaining and defining their information needs. Information is a crucial business and management resource, so there should be a detailed inventory of that resource in the form of an information map and established measurements for studying both its cost and value. Views describe the information required from a particular viewpoint of perspective and always shows a subset, or a filtered selection, of the information map. To understand the information needs of an organization requests a building of the set of views that cover the needs of each information user. While each view is distinct, there are inevitably overlaps from one view to another. Views are also used to capture snapshots of information architecture at different points in time and are, therefore, the mechanism used to map and manage changes.

Deciding the types of responsibility

Information architecture should take into account four types of responsibility:

1. Governance responsibilities – Responsibility for overall direction and control of information. It is usually governance that organizations are thinking about when they talk about information ‘ownership’. Ownership does not convey what the owner will do, whereas more precise words such as fund, plan or control are more specific; saying that the accounts department funds information about budgets and financial transactions is more exact than saying that they own this information. Governance responsibilities include funding information systems,
planning information development and supporting the information architecture.

2. Stewardship responsibilities – Responsibility for the quality of the information source. It includes activities for looking after information, such as creating it in the first place, archiving information that is not used very often and deleting it when it is no longer required. The same information is often created more than once in organization, simply because the responsibility for creating or sourcing it is not defined. Other stewardship responsibilities are repeated unnecessarily, or not carried at all. Verbs used to describe stewardship responsibilities include create, update, distribute, archive, delete, enhance, source, generalize, transform, optimize, specialize, normalize and gather, used as in create information, update information, distribute information and gather information.

3. Infrastructure responsibilities – Responsibilities for creating the right environment for using information. It is responsible for defining and setting up appropriate information structures, including information technology responsibilities, such as defining database structures and links between information systems. Typical verbs include define, design and structure, for example in define information items or design information structures.

4. Usage responsibilities – Covers the efficient, effective, productive and innovative use of information. Usage responsibilities are often forgotten because of the focus on responsibilities at the ‘ownership’ end of the spectrum. We may ‘own’ our houses, but everyone who lived in it shares other responsibilities because we all use it in different ways – eating, sleeping, working, painting or entertaining. Usage responsibilities include using, analyzing, deciding, evaluating, validating, verifying and assessing information. Thinking about specific actions or activities makes it easier to understand and allocate responsibilities. Most types of responsibilities are present and they should be made explicit for all categories that require change. Responsibilities for funding and providing resources are likely to lie with senior executives and linking each information category to four high-level responsibilities is a quick way of seeing which categories lack the necessary executive commitment. It is important that information is used.

A form requesting a loan, asked applicants whether they were male or female, but once entered onto system this information was never used again. This responsibility is more than simply using information – where appropriate it should ensure that the information is used efficiently, effectively, productively and creatively. The time and date for transactions could be used simply as a record of an event, or it could be used effectively to analyze purchase patterns according to different times or day or sessions. Common problems are keeping information when it is no longer useful or necessary, having more than one department create the same information and having information that is not used to anywhere near its full potential.

A company specializing in developing software had multiple intranet sites running to many thousands of pages. When it looked at the responsibilities for the content of these pages, it realized that no-one had responsibilities for removing pages when they became outdated. They decided that anyone posting material had to give it a ‘sell by’ date to show when the information was no longer useful. In addition, the web architecture group took responsibility to new meta data to capture information about which pages were accessed and used.

Deciding the levels of responsibility

It is impossible to define all responsibilities for information at the same level within an organization because some responsibilities only make sense in part of a company, information may be unique to certain departments and opinions will vary from person or from one team to another. Consequently, the architecture must have several levels of responsibility to handle these variations and differences. Most organizations have three or four district levels, while some organizations need seven or eight layers adequately to cover their needs. The most common level is one to cover information that is a consistent enterprise-wide, which is mirrored in the frequent use of the phrase ‘Enterprise architecture’. While it is often desirable to have a homogeneous information structures for foe economy and simplicity, standardization can result in suppressing individuality and difference where it is most needed. The development of new products or new markets often requires original and creative use of information, which might be impossible if enterprise standards are too constraining.

A practical solution is to have what Paul Strassmann has called a ‘federal governance model’, with responsibilities for information being defined at the most appropriate level (Strassmann, 1995). He states that ‘well over 80% of the labor cost associated with application development and maintenance are caused by the need to define elements that would already exist if you had global, enterprise, function and business layers in place’. Above the enterprise layer are levels defined elsewhere, such as standards specified by international bodies, or generic information models and architectures that are available for various industries. These higher levels, which can save a considerable amount of time and effort, are often overlooked by organizations which insist on ‘reinventing the wheel’ when developing their own information architecture. For example the American National Standards Institute (ANSI) is a membership organization founded in 1918, that coordinates the development of US voluntary national standards in both
The International Standards Organization (ISO) sets international standards. Founded in 1946 and headquarters in Geneva, it carries out its work through more than 160 technical committees and 2300 subcommittees and working groups and is made up of standards organizations from more than 75 countries. Among its many standards are ISO 3166:1974 which sets out a two-letter and three-letter alphabetical code for representing the names of countries, dependencies and other areas of special geopolitical interest for purposes of international interchange, ISO 4217 defining standards values for currencies and ISO 8601 which defines an international date format, showing dates in the format yyyy-mm-dd. In this format, the 25th June 1953 is written as 1953-06-25. Below the enterprise level are tiers that recognize the information needs of different business units, products, projects, or regions, as well as the opinions of individuals.

An enterprise-wide level is almost certainly required, unless the information architecture is only to be used in one or two departments. The geography level is only required if organization operates in more than one country and the architecture need to be adapted to meet regional differences. It is very important not to underestimate cultural difference; forcing a ‘standard’ architecture across a multinational organization does not work. The local level is usually subdivided into a number of sections, with responsibilities allocated to separate projects, business units, locations or products when their needs are not identical to those at the enterprise level. The personal level is most often used as an interim step in gathering requirements for a local level. Table 1 gives an example of the levels of responsibility used by a typical multinational corporation. There are many geographical levels, but these only cover variations of components in the architecture that are defined and managed at the enterprise level. Local levels are responsible for using components at the enterprise or industry level whenever possible and for defining new components or for variations from the enterprise standard.

A multinational organization was made up of a number of different companies, some of which operated with a high degree of autonomy, while others had very close controls with the parent company. Information needs were different in each country, so it was important to clarify responsibilities for information that was shared between the parent company and its subsidiaries, particularly accounting information that had to be passed up to the parent company for inclusion in the consolidated accounts and annual reports.

There needs to be suggested levels of responsibility which should be adapted to suit specific needs within organization. There needs to be a decision what levels are required based on difference in the use of information and potential difference of opinion, knowledge or experience; than arrange these into a hierarchy of levels. At the lower levels, add detail that are specific to organization, for example adding the names of business units or current projects, or listing countries and regions that require differences. Levels of responsibility can be applied to any resource that is owned at multiple levels within an organization. Levels of responsibility help share the cost and effort of the information architecture. Without this formal approach in place, it is difficult to share resources and infrastructure. Internal accounting procedures are one mechanism allocating and sharing costs and levels of responsibility are a similar mechanism for defining obligations to look after and use information.

**Assigning responsibilities**

The checklist given here for levels and types of responsibility can be used in many different ways – but their prime use is to make sure that the important information types are adequately accounted for. A simple matrix between information categories and the four types of responsibility provides a quick, high-level overview – as shown in Table 2.
Table 2. Example types of responsibility.

<table>
<thead>
<tr>
<th>Information category</th>
<th>Governance</th>
<th>Stewardship</th>
<th>Infrastructure</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer information</td>
<td>All customer relationship and marketing departments. Facilitated by the enterprise architecture team</td>
<td>Customer IT department</td>
<td>Enterprise architecture team, Human resources, IT department, Process support team</td>
<td>Process support team, Business units, Customer relationship roles, Marketing roles, Enterprise architecture team</td>
</tr>
<tr>
<td>Transaction information</td>
<td>Sales and marketing, Accounting, Warehousing and distribution</td>
<td>Accounting, IT department, Branch managers and staff</td>
<td>Accounting, IT department, Location managers</td>
<td>Sales and marketing, Accounting, Warehouse and distribution</td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For customer information, funding and planning change is the responsibility of the business through the relationship and marketing departments, while customers are given direct responsibility for keeping their own information up-to-date. The business units are also explicitly given responsibility for using the information and would therefore be accountable to show that they used information efficiently and productively. The enterprise architecture team plays a key role in facilitating study of requirements and changes, designing information structures and gathering feedback on the use of information.

By increasing cooperation and team–work across projects and business functions we can combine the efforts of separate project teams by working together on common elements, and only working separately on components that are unique to a single project, thus taking advantage of analysis that has been carried out in other parts of the organization. Many of the problems and issues facing individual organizations are very similar, so instead of working on these problems individually, it makes a lot of sense to work with other organizations to solve the issues. Forming alliances even with organizations that might previously have been considered competitors, can be a very effective way to get benefits. This type of cooperation is increasingly common among organizations in a particular industry sector.

Responsibilities for changes

Just as some responsibilities are assigned for information, so someone must be responsible for each change in action plan – otherwise the changes will simply not occur. A problem with ownership is that, it rarely seems to reside with those responsible for funding or carrying out changes. Making the responsibilities explicit, removes the possible stalemate that occurs because a key duty is omitted. In many cases, the responsibility for changes is the same as that for information, making it easy to add this detail to the action plan. There are some situations when external people may be needed, for responsibilities that require a special knowledge and skills, such as architecting and modeling information system. External support can be shown in responsibilities for information or changes in exactly the same way as internal staff.

Conclusions

Ownership does not adequately describe the obligations of the owner and instead it is better to describe explicitly what is meant by ownership – such as responsibility for legal compliance or funding change. Assigning responsibility for information is critical for architecting organizational changes because it describes explicitly how people must collaborate to ensure success. Responsibilities are defined for views on information, which makes it easy to represent accurately differences of opinion and overlapping accountability. The types and levels of responsibility show who is accountable and where responsibilities must be shared.

Many architecture programs stumble because responsibilities are not well defined, the single most important issue being who should fund changes. The types of responsibility are designed to span all accountabilities for the key information categories. Levels of responsibility help share the cost and effort of the information architecture. Responsibilities provide an accurate way of adding information about accountability to planned changes and linking individual changes more directly to an overall blueprint for change.

REFERENCES


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