Chapter 2
The Importance of an Enterprise Information Management Strategy

John Septer

All men can see these tactics whereby I conquer, but what none can see is the strategy out of which victory is evolved.

Sun Tzu (Chinese general, military strategist, c. sixth century BC).

In today's world it is difficult for organizations to keep up with the continuously changing market demands. The consumer is an individual and wants a personalized service. Customer loyalty is much harder to keep. This creates a tremendous challenge for organizations to keep existing customers and attract new ones. Developments in social media, the exponential growth of data, ever-changing laws and regulations, and the enormous amount of touch points (channels) are examples of the continuously changing environment for organizations. Organizations must make choices and not jump on every new development without first mapping the consequences. This requires leadership and the ability to make choices and to underpin these choices. These choices and the underpinning are part of an organization's strategy (Fig. 2.1).

The funnel model gives insight into this complex environment. Each organization must deal with this every day, month and year. As mentioned previously, the world is changing and changing fast, making it increasingly harder to stay ahead of the competition. Organizations need to focus on added value for the customer. With this in mind they should orchestrate every activity, asset, value, or resource within the organization to keep up. This is very hard to do. The challenge is to create a stable strategy to which every aspect within the organization can relate.

In addition to all the external threats such as innovations, new or changing technologies, competition, and so on, there also are a number of internal forces at work. These forces, like money, politics, resources, and time, compel organizations having to make choices. This is also related to the fact that changes have a cost.

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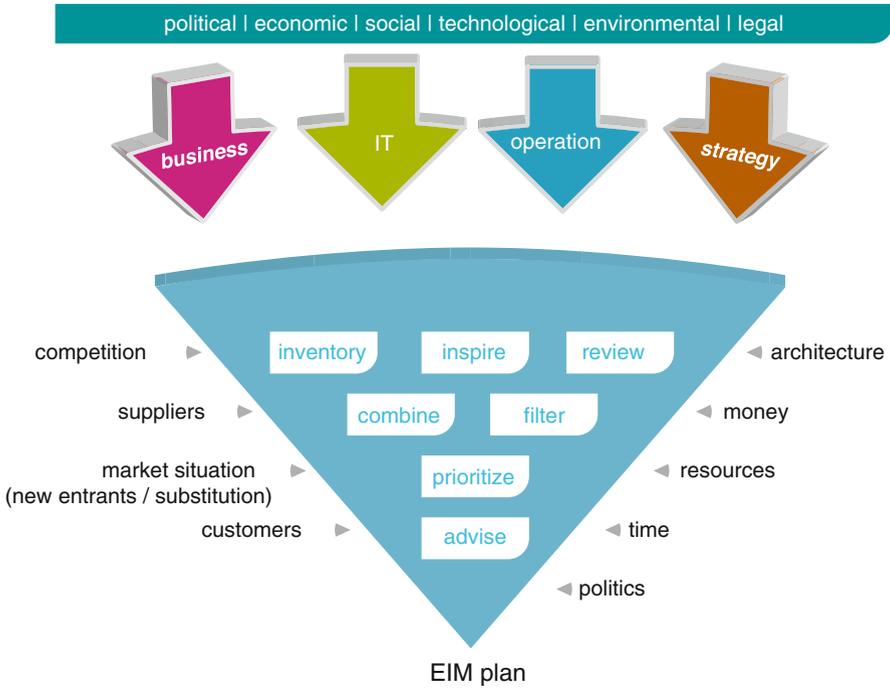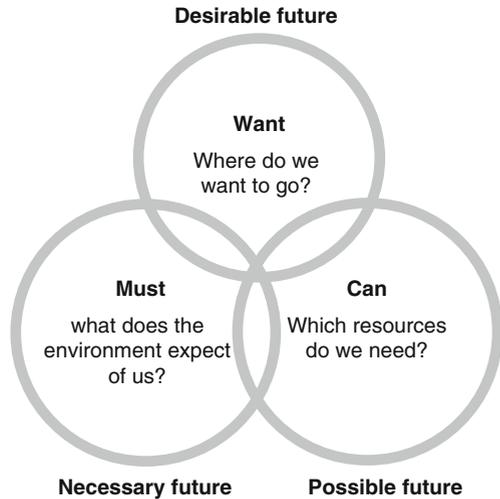e-mail: john.septer@incentro.com

political | economic | social | technological | environmental | legal

business

IT

operation

strategy

competition ▶ | inventory | inspire | review | ◀ architecture

suppliers ▶ | combine | filter | ◀ money

market situation
(new entrants / substitution) ▶ | prioritize | ◀ resources

customers ▶ | advise | ◀ time

◀ politics

EIM plan

Fig. 2.1 Funnel model

Fig. 2.2 Want–must–can model

Desirable future

Want
Where do we
want to go?

Must
what does the
environment expect
of us?

Can
Which resources
do we need?

Necessary future   **Possible future**

Some changes are necessary, because of regulations, and some are needed to keep up with the current competition or to create a unique position. Striking a balance between what an organization wants, what it must do, and what it can do is essential for success (Fig. 2.2).

To make the right choices, it is necessary to weigh all factors (both external and internal). By doing this, you are able to get a clear understanding of what is needed – and when, because you cannot do everything at the same time as an organization. The main objective is to fulfill the greater good (strategy), and on that basis a distinctive competitive advantage can be achieved. The different activities that must be undertaken to make the right choices for an organization are identify, judge, combine, filter, prioritize, and advise. The choices made are captured in a plan, the enterprise information management (EIM) plan.

Identify	Perform an analysis of the organization according to the need, want, can model. What does the organization want? What are the ambitions (needs and requirements) of the business? What should the organization do, from the standpoint of policy or external laws and regulations? And finally, what are the organization's capabilities (can)? The *can* represents the physical conditions (technology), resources, time, and finances
Judge	Based on the analysis, the state of the organization can be assessed. The need, want, can model gives insight into the degree of success of the organization. If one or two of the three elements are mostly lacking, it makes little sense to continue. It is then important to find out what is needed to make the weaker elements stronger. All this relates to the maturity level of the organization
	Furthermore, the analysis gives insight into the interdependencies of the various stakeholders. It can be used to estimate the extent to which a stakeholder needs, wants, and can. The need, want, can analysis may indicate that critical stakeholders can meet and strengthen each other
Combine	Try to combine the different needs, wants, wishes, and necessary changes as much as possible to serve multiple stakeholders. This provides more support within the organization and prevents things from being done twice. Essential within this process is communication. Combining the needs, wants, wishes and changes will lead to compromise. These compromises will not always represent all the desired results of a particular stakeholder (in the short term) but will provide added value to the organization and the stakeholders in the long run
Filter	Filtering the actual need to get to the next level of maturity in information management. Define the various projects/initiatives in the different areas (people, process, technology, and information) of the organization to get to the next level. Initiatives necessary to improve a weak element will be given priority. This approach is necessary if the organization wishes to eventually achieve its higher objectives
Prioritize	Then prioritize according to business needs. This will allow information management to target the most urgent business needs and issues. These in turn are derived from the overall business strategy and direction for the organization as a whole. Always keep in mind the need to deliver tangible and visible benefits
Advise	There is no single application or project that will address and resolve all the information management problems of an organization. The answer is to let go of the desire for a perfectly planned approach. Instead, the journey is more important than the destination. This approach recognizes that hundreds of small changes are often needed to improve the information management practices across an organization. These changes will and can often be implemented in parallel or can only be implemented sequentially. With a consideration of all the different forces, both internal and external, and the corporate strategy the right choices can be made in planning the different initiatives and projects over time. What is adding value for the here and now? What is adding value for the future? What is needed as a foundation to achieve added value? These are all questions that will be addressed during the advice activity

2.1   Challenges

Besides the industry dynamics in which an organization finds itself, it is crucial for organizations to get a grip on the management of internal information . The ability to apply and use correct and timely information is a major issue for many organizations. Examples of problems currently facing organizations include the following:

The amount of information generated by organizations is growing exponentially;

Current resources (applications, systems, infrastructure) are inadequate for managing the tremendous growth in information;

It is becoming increasingly difficult for organizations to determine the relevance of information, despite enormous investments in information technology;

The outside world is changing and requires that organizations, regardless of which channel whatsoever, provide the same information at the time the outside world demands;

Current ways of working require increasing levels of transparency and reinforce the need to share information between departments, suppliers, customers, and partners;

Incompletely documented end-to-end processes within organizations lead to inefficiencies and unnecessary delays, which ultimately have a negative impact on the time to market of an organization;

The lack of clear governance policies and guidelines result in a proliferation of applications and inconsistencies in information models;

There is no "single version of the truth; it is impossible to know if the "right" version of the data is being used. This issue is compounded by the potential for duplication and inconsistencies;

Knowledge workers within organizations waste a lot of time either looking for or getting access to information or implementing workarounds of the information they need.

Given these issues, it is essential that organizations understand the importance of information management. Information management refers to the storage, management, and provision of data and information within an organization. When an organization understands its information, it can work to improve information management capabilities. This gives the organization control over the current situation and over further improvements in its information management policies. In order means providing the right information, to the right people (internal/external), at the right time, at the right cost. Only then can an organization achieve its "higher" objectives.

2.2   What Is Strategy?

A simple question with many different possible answers. A good definition with regard to strategy is given in the book by Kenneth R. Andrews *The Concept of Corporate Strategy* (1971):

> "Determining the goals of the organization and the set of coherent choices regarding the allocation of resources and activities to realize the goals."

Porter (1996) gives the following definition of strategy:

"Strategy is creating fit among an organization's activities"

Richard Rumelt[1] states that a strategy is in essence simple. Business strategy is about the focus on resources, and a good strategy focuses multiple resources on a single objective.

The development of a strategy consists in the integration of activities, functions, and resources across an organization. Many people confuse strategy with operational effectiveness. Operational effectiveness is about achieving excellence in individual activities, functions, or resources; strategy is about combining these (Porter 1996).

Let us focus on resources. A resource can be seen as an asset or capability within anorganization. Every organization is built up on a very different set of tangible and intangible assets and capabilities. No two organizations are the same, because no two organizations have have the same internal set of capabilities or assets. The combination and integration of the different resources in support of the overall strategy determine an organization's success (Collis and Montgomery 1995).

A resource can be either tangible or intangible. Thus we can say that information is an intangible asset for an organization that represents a certain but unidentified value.

It is clearly very important than an organization think about what it wants to achieve and how these goals are to be achieved based on the current set of resources and subactivities. A strategy provides insight and answers to the following questions:

What are the vision and ambition of the organization for the long term?
What is its unique position within the market, branch, or industry?
Which products and services does the organization want to bring to market?

- Which markets (segments) does the organization target and how?
- What current and future developments in the market influence the functioning of the organization?

You could say that strategy is calculated behavior in a changing environment. Calculated behavior indicates that an organization has thought about its ability (capabilities) to act, combined with ambition. The complexity in defining the right strategy derives from the fact that an organization is made up of different parts. Consider the finance department, the marketing department, Information & Communication Technologies (ICT) department, human resources, and production. All these departments exist and make their contribution to the whole, and all have their own strategy. The difficulty for the organization is to align all these different strategies within the organization in order to achieve the higher defined business goals, which form part of the corporate strategy.

Having a strategy is the first thing. What needs to happen to fulfill the defined strategy is the second. *Begin small, think big*. An organization cannot do everything at the same time. The fine-tuning of the different initiatives is of great importance. Precisely on this point there is often friction within an organization. As mentioned, departments have their own strategies and find that the defined plans and activities

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[1]Richard Rumelt is Harry and Elsa Kunin Chair in Business and Society at the University of California-Los Angeles.

should have the highest priority. Alignment and risk reduction are needed here. When executing the strategy it is good to break up the planned implementation of the plans and initiatives into short-, medium-, and long-term time boxes.

Essential in having a strategy is being unique in an industry. Nowadays we see that many companies have operational excellence[2] as a strategy. This is not a sustainable strategy because operational excellence is becoming the norm, rather than the exception, in industry. For the other two value strategies (customer intimacy[3] and product leadership[4]), from Treacy and Wiersma (1995), the same thing applies. However, delivering customer value is very important and should be the main driver for an organization in defining the strategy.

Making choices in defining a strategy is very important. Focus and choices determine the structure (business model) of the organization. The business model of the organization and the strategy should be consistent with each other. The overall business strategy is to steer the other strategies within the organization.

Without a strategy an organization is rudderless and will not survive long in today's changing and demanding world. *Without a strategy, no sustainable entrepreneurship is possible.*

2.3   EIM Strategy: What Is It?

An EIM strategy can be defined as an organization's unified blueprint for *capturing*, *integrating*, *processing*, *delivering*, and *presenting* information in a clean, consistent, and timely manner. An information strategy supports the goals and strategies of the business, as part of the overall business strategy, with a clear focus on information as asset.
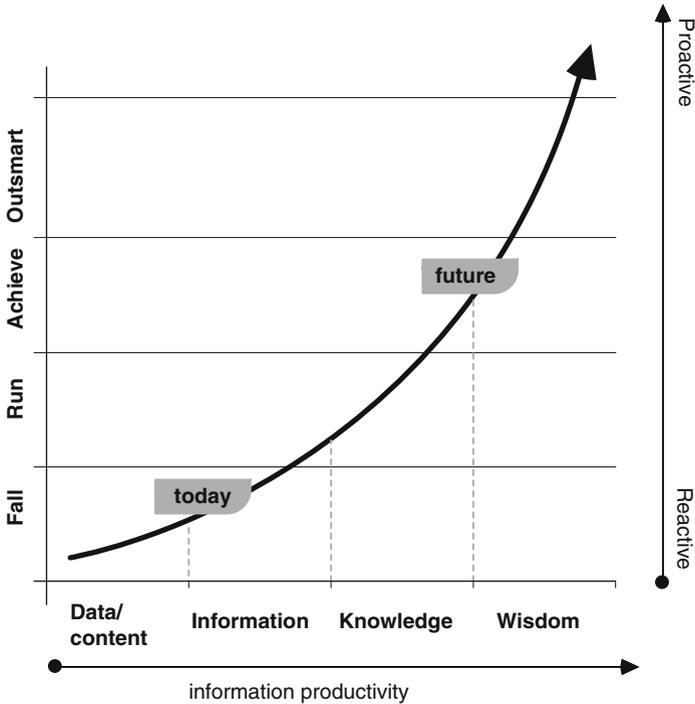
2.4   Information Management

Information management deals on the strategic and tactical levels with the provisioning of information within the organization.

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[2] Operational excellence: Strategy characterized by a high degree of standardization and tight, uniform control of processes. The starting point is a quick, unambiguous delivery of products and services to customers at the lowest cost and least time. Focus on efficiency, cost, and time savings.

[3] Customer intimacy: The wishes of the customer come first. Focus on loyalty and customization.

[4] Product leadership: Flexibility, adaptability, initiative, and individual thinking are central to this strategy. The focus is both on innovation and on market conquest.

Fig. 2.3 Necessary journey for organizations

The driving force in information management is to provide information. By provisioning of information we mean the set of people, resources, and actions of an organization, where one focuses specifically on the information needs of the organization. The information needs of an organization can be divided into three categories.

Operational information:
All the information needed to perform the day-to-day work within an organization

Control information:
Specific information needed for managing an organization

Accountability information:
Information on how operation and control proceed within an organization

Progressive companies are those companies that are able to put information at the heart of how they do business. Organizations that do not adopt the new way of thinking will find themselves becoming increasingly less competitive. For most organizations this will necessitate a complex journey (Fig. 2.3).
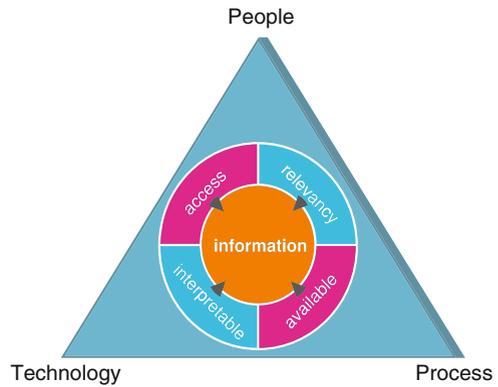
This complex journey results in the need for change within the organization. The change is complex because it can only be achieved by a combination of actions. Each organization needs to plan its own personal journey in detail to ensure that it is moving forward in the right direction.

But how will you know as an organization that you have been successful? There are several signs that indicate success for organizations:

Information-based decision making becomes a core competency of the organization.
A strong focus is developed on driving a step change in business outcomes through effective exploitation of information, often in conjunction with customers, partners, and suppliers, who are able to act proactively on changes in the outside world.
The right, relevant information is provided on time through different channels to support the customer journey.
Information is delivered consistently across the organization, i.e., asking for the same information in different divisions yields the same result, and users and applications do not have to wait long to get their requested information.

The starting point for developing and implementing an information strategy for a specific organization is composed of a number of primary focus areas, dimensions that will give insight and answers on how to move forward (journey) (Fig. 2.4). These are:

Information
Human, Culture and organization
Process
Technology

2.5   Motives for an EIM Strategy

Several reasons exist for implementing an information strategy within organizations. Peter Hinssen (2010) conducted a small study in his book *The New Normal: The Revolution Has Begun* to identify the reasons for implementing an information

strategy. Based on this study Hinssen distinguishes six motives for implementing an information strategy. These six motives are then divided into two groups: defensive and offensive.

Defensive	Offensive
Compliance	*Speed*
Because of rules and regulations, certain documents must be archived, and there are strict rules about who gets access to what information and who can modify the information	Quick access and distribution of information throughout the organization are key
Control	*Share*
The quality of information is essential; the whole cycle of creation, approval, publication, and archiving is closely monitored	No silos in which information is locked, but creating value by working together to create and share information
Archiving	*Intelligence*
The emphasis lies on "lose nothing"; all documents are stored for easy retrieval	Accumulated knowledge and cocreation are the keywords

It is clear that the defensive motives have a strong internal character. They are aimed at solving current problems within the organization in the field of information management.

The offensive motives are much more progressive in nature. Of course, it is necessary to solve current problems. But matching the information strategy with the business strategy also requires having a vision. It requires more than solving current problems. Addressing the defensive motives can be a sign that something is wrong in the internal information provisioning. The defensive motives block the progressive motives within an organization. You can see the defensive motives as part of the foundation. The foundation is the precondition for excelling as an organization.

Most of the time the motive to start formulating and implementing an information strategy is process optimization. Based on the current processes within an organization you can see where there are problems regarding the information provisioning. From these areas you can investigate what the impact is on the overall processes and what the improvement could be if the information provisioning were optimized.

Another reason an information strategy is needed in an organization is the fact that nowadays there is too much information to manage loosely. We can speak of an information overload. It is clear that an organization needs a plan, a strategy on how to acquire, capture, store, govern, and deliver all information to internal and external users of this information.

The overall goal for developing information is to be consistent with the corporate strategy. In the end every aspect of the EIM strategy should support the vision and ambitions of the organization.

2.6   Defining an EIM Strategy Is Complex

Establish an information strategy based on an evaluation of the business strategy.

Defining an information management strategy is complex because most organizations do not know what their current maturity level on information management is. In addition to that, where do you start as an organization? Organizations are very complex environments. There are many challenges that need to be overcome (both external and internal). Successful information management is underpinned by strong leadership that defines a clear direction.

To understand the importance of an information strategy, imagine the following "what if" scenarios:

What if you knew where all of your corporate information resided?

What if everyone in your organization understood how their efforts contributed to meeting organization goals and objectives?

What if your organization used its management information to actively steer the organization forward, not just for historical reporting?

What if you could access the right information at any time to support decision making?

What if you could predict the outcome or leverage opportunities based on trends in your business?

What if you could achieve a marked improvement in collaborative working with partners, suppliers, and customers?

What if you knew that you were fully compliant with all regulatory requirements?

What if you could trust that all your information was accurate, complete, relevant, and up to date so that you could rely on it when you made business decisions?

Based on these questions we can see that setting up an information strategy can be very complex, but to be able to manage information in the right way, it is essential that an organization develop a strategy. It starts with understanding where the organization is today regarding information and where it wants or needs to be in the near future. This all relates to the maturity level of supporting and managing information within the organization.

It is very difficult for organizations to determine their end goals and ambitions ("To Be" vision) and to prioritize between the different initiatives related to information. Do you start as an organization with data quality, content management, or information governance? It is impossible to do everything at the same time. Where do you start?

2.7   Enterprise Information Maturity Model

The EIM maturity model was created to help organizations increase the return on information (ROI). The model does not assume that you can talk in absolute terms about ROI.

The EIM maturity model aims to assist organizations in identifying areas of processes or information domains where the difference with the competition can be made.

The model allows organizations to identify which kind of investments in which information domains need to be done.

The model recognizes four different stages or maturity levels of ROI. The lowest level of maturity is *fail*, which simply means there is insufficient information available for certain processes to run smoothly.

The next higher level means that the information for a specific area is just enough to get the associated process to be executed satisfactorily. This level is called *run*. Some versions of the model also cover a state called *comply*. This state is mainly interesting for organizations with strong pressure on complying with internal or external rules and regulations.

The next level of maturity is called *achieve*. The focus of this level of maturity is efficiency. This level is about executing primary and important processes as quickly and accurately as possible, making optimum use of available information. Business process management (BPM) and operational business intelligence (OBI) are common terms used in connection with this level of maturity. Quick decision making is important here.

The highest maturity level is called *outsmart*. This level is about using the same information as your competitor and, perhaps, making smarter decisions. Organizations that have primary processes on the outsmart level establish a strong competitive position. This level is not only about having access to the right information at the right time, but it also reflects that the behavior of knowledge or information workers is positively influenced. This means that there is room to include other than purely rational ways to deal with information in order to achieve better understanding.

The first two levels of maturity are not very surprising. Here the focus for organizations lies purely on survival, and organizations are simply incapable of showing distinguishing behavior over their peers. However, it gives much insight into areas an organization needs to work on before it is able to act proactively.

The top two levels are for two reasons much more interesting. First, these are the levels at which an organization can stand out from the competition (short and long term). Second, operating on these levels requires continuous monitoring of the environment to adapt to the ever-changing situation. To continue to operate at these levels, it is necessary to implement a learning cycle. This learning cycle is aimed at continuously identifying changes in market requirements and in the organization and being able to act on these changes.

Determine as an organization your maturity level with respect to information management, and define your goals and ambitions. Then take into account the different factors and influences in today's world. Based on that you can define what is needed for you as an organization to grow to the next level of maturity and achieve a competitive advantage. The easiest way to prevent capital failures is to always reason from the business objectives.

Outside the four levels of maturity are two aspects of concern applicable to the entire model. These are information management and information value.

Aspect	Meaning
Information management	Information management is concerned at the management level with the question of how an organization can effectively and efficiently satisfy the need for information on an ongoing basis
Information value	The added value of information for the organization

These two aspects are the assessment criteria (benchmark) for a particular maturity level in the model.

Maturity level	Information management	Information value
Outsmart	Information is an asset and organizations are constantly looking for opportunities to do more with this asset. New opportunities are used to better meet the information needs of tomorrow. New opportunities are applied to retrieve more information from existing information sources	Data and content are used to improve customer service. Workers know what customers want, what they find important. Services and products are based on the available information adapted to customer needs to bind the customer more closely to the organization
Achieve	Data quality is an important issue at this stage because this influences the effectiveness and efficiency of processes. Data stewards are appointed to oversee the improvement of quality	Data and content are used throughout the organization and deal with uniformity and efficient processes. After all, data and content are recorded only once. There is no discussion about the meaning of information. The metadata model is well known and accepted. Information is shared so that benchmarking is possible between business units. This increases efficiency
Run	The organization has mapped the information flows. It has a view on duplicate processes (for example, multiple captures of customer data) and how the information is used and shaped during the process	Information has been given a formal meaning within the organization. This example leads to less discussion about the meaning of terms that are used. The reports are ambiguous. The term *key performance indicator* (KPI) makes its careful entrance
Fail	The organization focuses only on daily business processes without seeing these processes in conjunction with the rest of the organization There is no question of information management. Everything is arranged in a decentralized way, and the necessary information to justify the works is managed manually	The organization considers information as a burden and is busy with cramming the daily processes into existing systems without worrying about the consequences of workarounds

2.8 Key Elements for Success

The following elements are key to successfully developing and implementing an information strategy within an organization.

2.8.1 Communication

Make clear that what needs to be done is in line with the overall business strategy. Communication is extremely important. Communicate, communicate, and communicate. Departments within enterprises can be seen as so-called islands, in which the people are very committed to the interests of the department. Misunderstanding often emerges when the organization gives priority to other plans. It is therefore important to keep communicating. In addition, it should be made clear that the execution of a strategy is a *marathon rather than a sprint*. It is a long-term vision, an ambition that the organization pursues. To confirm the success of strategic implementation, it is very important that KPIs be defined and actually measured and evaluated.

2.8.2 Leadership

Showing leadership within the organization is key. Upper management should have a vision (regarding information as an organizational asset), be able to inspire others within the organization, and take accountability for that vision. Strong leadership is all about making choices. Porter (1996) indicates that leadership is more than the stewardship of individual functions. It is all about communicating the organization's unique position, making tradeoffs, and forging synergy among activities.

2.8.3 Commitment

Commitment is very important in building an information strategy. The information strategy is owned by the entire organization, not the happy few. It is very important to define benefits for all the different stakeholders throughout the organization. Benefits differ among stakeholders, and it is very important to be aware of that. Everyone should understand "What's in it for me." Only then will there be commitment throughout the entire organization.

2.8.4 Execution Discipline

It is important that a strategy be executed. Execution discipline is the key success factor for optimal implementation or execution of strategy. In addition, one of the most important preconditions is commitment. Everyone must agree with the path and the principles set. The mapping of the stakeholders, both inside and outside the organization, provides insight into the forces that influence the optimal execution of the strategy. Matching the various plans/strategies is therefore one of the biggest challenges for companies.

2.8.5 Governance

Governance is all about encouragement of the desired behavior in relation to information; tt is not about coercion. Influencing the behavior of people to do the right thing for the organization is key to achieving the goals of the organization. If people want to act differently, that will affect the success of information management. People should feel and see the added value of acting according to policies and guidelines and they should realize that this acting does not always have a direct benefit.

2.8.6 Change Management

All ingredients that are preconditions for success are implicitly part of change management. The involvement of the organization – explaining why, clarifying the course, and making the message clear –results in greater understanding by workers.

2.8.7 Added Value of an Information Management Strategy

The added value of performing an information management strategy is significant. It gives great insight into where you are as an organization, and it determines what path you must take as an organization and what you need to do to remain successful. Following are some examples of added value for your organization:

- Your business processes will better perform with improved information provisioning.
- The return on ICT investment will increase.
- Risk of failure of ICT projects is minimized.
- Relevant and right information is delivered at the right time to improve decision making.
- Possible future outcomes will be more predictable and how to act on them will become more clear.

- Information provisioning responds more quickly to market changes and changing laws and regulations.
- There will be a stronger focus on what is good for the organization instead of the best solution for select individuals or departments.
- The primary focus will be on the information problem area and its impact on the business and possible solutions; technology will become the secondary focus.
- Information will be used in a consistent manner within the organization and the overall framework of organization objectives.

2.9   What Is Information?

But what is information? There is no single comprehensive definition of information. A number of similar concepts surround the term *information*, such as message or data. Everyone has an intuitive notion of the term. Information is an abstract concept, subject to interpretation, consistency, an understanding of the situation, and context (Fig. 2.5).

Information is compiled by the interpretation of two raw materials: data and content. Data are facts or things such as text, numbers, and images without meaning or context. (The context is the overall environment in which anything acquires meaning.)

Content refers to unstructured information. Information is obtained through the interpretation of data and content. The reason for interpretation is to give meaning or value to data and content. The integration of information into existing business processes leads to knowledge, and knowledge is the use of information. Weggeman
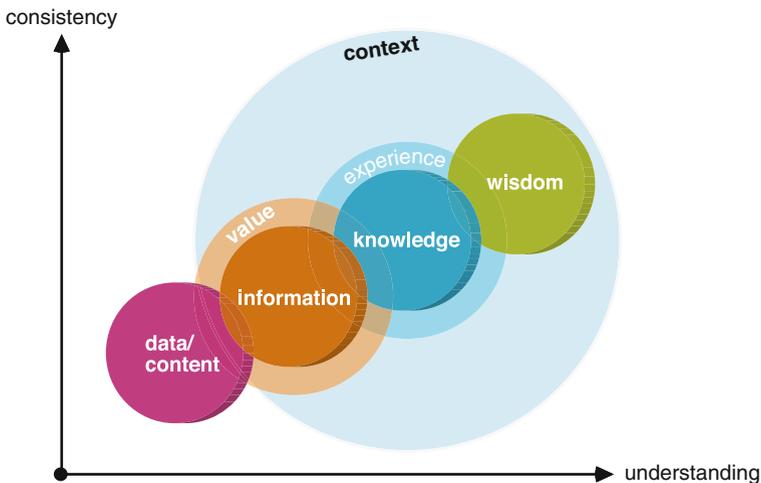

Fig. 2.5 Characteristics of information

(2000) describes knowledge as "partly unconscious – the capacity that enables someone to perform a certain task. A power that is a metaphorical function of the Information, Experience, Skills and Attitude that someone has at some point in time: $K = f$ (I.ESA)."

If employees apply knowledge within their day-to-day work, this will lead to (positive) change in behavior. Ultimately, applying knowledge leads to wisdom (intelligence).

> We are drowning in information but starving for Knowledge (John Nesbitt 1990).

Wisdom is more than just knowledge; it has to do with insights about life, moral responsibility (which is good and bad) about our self-knowledge, and mastery of our passions and pitfalls (as individuals and as a species). Wisdom also has to do with living, perhaps coming to a collective consciousness, harmony with others, and with the environment (nature) around us. For that we need not only our heads but also our hearts and stomachs. Much of our wisdom lies in the structure of our society, government (democracy, respect for minority opinions, care for the weak), the law (justice rather than retribution), and scripture and other sacred works.

In his book Het informatieparadijs, Guus Pijpers (2011) indicates that information is all around us. Sometimes it is sensible (a wall, a pen, someone's arm) via the senses through which we acquire information: smell, sound, vision (what you see), touch, taste. Not everything around us is intended to provide you with information; it depends on the person and the situation. Most people see or associate information with something tangible, such as paper, a CD, or photographs. These are essentially the media and not information. Information is part of what these carriers convey.

An apt analogy is the comparison of information within an organization with water. Nowadays we are used to the fact that we have access to clear, clean water whenever we need it. We use water for many different purposes within our households: water for showering, cooking, drinking, washing the car, or spraying plants. It has become a common commodity. We believe that we have access to clean water at a moment's notice. Therefore, the water department is responsible for providing us with water.

The same goes for information. We want to have access to right (clean), relevant information at the right time. Therefore, we need a clear strategy in relation to information that will allow for acquiring, creating, cleansing, enriching, and integrating information. Only in that way can we trust in the fact that we will have access to the right information at the right time.

2.10 Characteristics of Information

Information has a number of characteristics. It represents value, is volatile, can be shared, is time dependent, and can be enriched.

2.10.1   Information Has Value

Information *can* have value within a given context. It will have greater value when it is shared, combined, and analyzed. The value of information depends on its use or purpose. The value of information changes over time and depends on the context and experience level of the receiver. You might say that information can be perishable, because it diffuses rapidly or becomes outdated (Porter 2008). In addition, the value of information depends on other pieces of information. Within a given context, information can typically be quantified.

2.10.2   Information Is Volatile

Information has a volatile character. People forget information relatively quickly (consciously or unconsciously) and interpret information personally (depending on background, situation, experience). Information is subjective. By capturing information (record), based on context, it is possible to make this information independent of time and place for the purpose of sharing. In this way, information is not forgotten. You can speak of forgotten information when such information is available, but it is not known what role or importance that information has played.

The recording of information can be facilitated on the basis of technological and procedural measures. This is based on making choices. Exponential growth is an enormous threat for organizations that wish to capture information based on a fixed set of principles. What information should be recorded and in what format? For how long and with what technology? In addition, the context in which information is to be recorded should be considered together with the information to make the information accessible over time.

2.10.3   Information Can be Shared

Information, or pieces of information, can be shared. Information can be shared during the execution of business processes or as a result of meeting legal obligations to provide certain information to third parties (such as tax authorities). The fact that information can be shared is important for organizations. Encouraging reuse and sharing of information (knowledge) leads to efficiency and effectiveness and consistency in information provisioning. The culture of the organization or the behavior of people can influence, counteract, or facilitate this. By nature, people tend not to reuse information. They rather recreate the information because they often believe that that is quicker than searching for the information.

2.10.4 The Value of Information Is Time Dependent

The value of information is time dependent. Some information is worthless after some time has passed. For a knowledge worker, it is very important that the appropriate, relevant information be provided as quickly as possible. Information represents a great value if this information is delivered in time. If information is provided too late, then the same information (content) no longer represents the same value.

2.10.5 Information Can be Enriched

To make information retrievable, information can be provided with descriptive metadata. Metadata are data about data. They enrich and add context to information. This enrichment improves the eventual retrievability and relevance of information.

2.11 Information Is an Organizational Resource

Decision making within organizations is based on information. To make decisions, it is essential that information be relevant, accurate, timely, and available. Information can therefore be seen as the most important business asset or resource within organizations because it is key for decision making.

Collis and Montgomery (1995) developed the concept of a resource-based view (RBV). In this model, which can be applied to all kinds of resources within an organization (tangible and intangible), the central question is: What makes a resource valuable? Value is determined on the basis of three criteria: scarcity, appropriateness, and demand. If we look at intangible resource information, we can say that information is everywhere. One can speak of an overload of information. But if we look at the need for right, relevant information at the right time, then we can say that such information is *scarce*.

The extent to which resource information can be *appropriated* determines positive action and decision making, and there is high *demand* for relevant information. All three criteria can be influenced by having the right strategy and combining the various activities (Fig. 2.6).

It is important for organizations to realize that information is an organizational resource and as such needs to be managed. As with any other resource, it has value. The value of information lies in its accessibility and accuracy. Therefore, the development of an information strategy is critical for business success and key to sustaining a competitive edge over time.

The ability to use information as a business resource ultimately has to do with three key elements: the quality, accessibility, and transparency of information.

Fig. 2.6 Resource-based
view
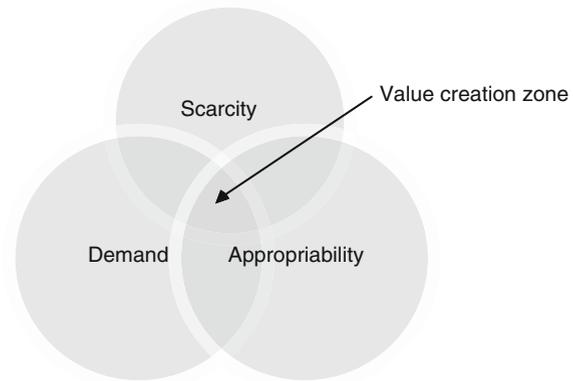
2.11.1   *Quality*

Quality of information refers to the contents, metadata, and application or use of information. If an organization is able to guarantee the quality of information, it will be able to make the best use of available information within the organization.

2.11.2   *Accessibility*

Information within the organization should be retrievable and accessible, either by internal staff or the external customer. Accessibility is all about information integrity and governance.

2.11.3   *Transparency*

Eventually good information management leads to transparency. Transparent information provides insight into customer information needs and the organization itself, ensures risk management, and provides insight into the information landscape and responsibilities. Ultimately, effective management and control can be facilitated if information is transparent.

On the other hand, the risks increase in relation to resource information when information is not managed in an orderly and consistent way. The risks related to information are as follows:

Noncapture of critical information
Loss of information
Lack of context or descriptive information (relevance)
Damage to information

Unauthorized access to information (control)
Unavailability of information
Loss or misplacement of information
Inaccessibility of information
Lack of ownership of information

2.12 Competitive Advantage

Competitive advantage, whatever its source, can ultimately be attributed to the ownership of a valuable resource that enables organizations to perform activities better or more cheaply than the competition (Collis and Montgomery 1995).

If organizations can excel on the resource information front, they create a competitive advantage over their competitors. Such organizations are able to proactively respond to changing customer needs and market movements. Today's customer is very demanding and not very loyal. The customer wants to communicate through various channels with an organization. For an organization it is important that the information in the various channels be up to date, relevant, and valuable to a particular customer.

In addition, information should be accessible to customers at any time depending on the type of information, whether direct or indirect access to the information is needed, or whether or not an employee needs to intervene. Only then will the customer feel like he or she is receiving individualized treatment. Proactive can also mean that, based on available information from the customer (or customer group), certain future behavior is encouraged. This may entail sending a shopping list, including suggestions, based on historical buying patterns. An innovative organization acts and focuses its services to match actual customer demand. Only then will it stand out from the competition.

Most organizations are only able to respond reactively, simply because the level of information management does not allow for a proactive response and the necessary knowledge based on available information is lacking. When an organization can respond or operate proactively, then information is used to its optimal value and power. Information is then a strategic business resource and used as such.

This also shows the tension between willing (want), need (must), and ability (can). Creating and putting in place the conditions necessary for satisfying customer demands will ultimately ensure that the organization will be able meet the want and the need.

2.13 Information Value Chain

Every organization has an information value chain in which raw data and content are systematically acquired and then transformed and enriched through various stages that add value to that information. The information value chain concept is based on the value chain of Porter (1985).
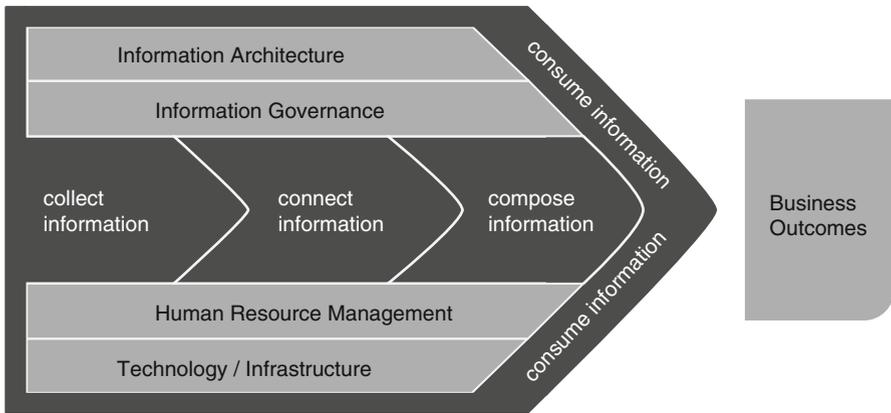
Fig. 2.7 Information value chain

The information value chain identifies the value activities required in the use of information. It represents the cycle of a common information asset, with the activities most likely undertaken by one entity (Fig. 2.7).

The activities can be broken down into two components within the value chain.

- Primary value activities relate to aspects of the chain that represent the core information product. They are collect, connect, compose, and consume.

Collect	This category includes all activities related to the acquisition, creation, enrichment, storage, and management of information. The collect activity is very important for the quality, accessibility, and life cycle management of information. It is responsible for creating the strong foundation on which all demands and requirements rest
Connect	This includes all activities related to making information appropriate by combining, integrating, and linking information from the various sources and systems across the organization. This means making information relevant by adding context
Compose	This group comprises all activities related to assembling, analyzing, interpreting, and navigating information. This activity is responsible for delivering right and relevant information, regardless of its source, in the right format and presentation form
Consume	This includes all activities related to the use of information by knowledge workers within the organization or people outside of it. The focus lies in sharing information, making decisions based on the delivered information, and informing others about it

Supporting value activities relate to aspects of the chain that assist the core information product. They are information architecture, information governance, human resources, and technology/infrastructure

Information architecture	Information architecture provides the framework against which change can be assessed. Information architecture concerns business capabilities and the translation into logical technology components
	It includes information structure, information integration, rules, and information modeling regarding all areas of the information value chain
	Information structure: definition of information entities across the organization; concerns what kind of information entities exist and the specifications of those entities
	Information integration: concerns how information will be exchanged between various systems
	Rules: definition of sources of information; has to do with which application is responsible for the management of what kind of information and holds the single source of truth
	Information modeling: definition of information structure models, metadata model, and taxonomies; these definitions are applicable across the entire organization
	The results of information architecture are as follows:
	Alignment of business and technology via the common language of information
	Definition of an end-to-end approach to information management
	Handling of risk management and mitigation
Information governance	Information governance has to do with encouraging desired behavior in relation to information, behavior in terms of actions like valuation, acquiring, creation, storage, use, archiving, and deletion of information; it includes the full set of policies, procedures, standards, and metrics (which are actively maintained) for all aspects of the management and provisioning of information to ensure effective and efficient use of information set down in the information architecture; they are actively maintained
	The following factors are subject to information governance:
	Accountability: clear definition of roles and responsibilities across the organization in relation to information; accountability concerns ownership.
	Governance organization: organizational structure that is responsible for monitoring governance policies
	Standards and guidelines: standards and guidelines for creating, processing, delivering, and using information within the organization
	Metrics: methods and instruments for measuring the effectiveness of a policy
	The results of information governance are as follows:
	Minimization of risk of failure through structured governance and oversight across all EIM initiatives
	Challenges for user adoption, growing data, content, and management controls are addressed through best practices, standards and guidelines, and a governance model
	Clear identification of responsibility and accountability for all EIM initiatives
	Continuous improvement in environment

Human resource management	Human resource activities include recruitment and selection, compensation, training (education) and development, and career management. The focus lies on the continuous monitoring of required capabilities for people to act optimally within the organization when it comes to information
	The results of human resource management are as follows:
	Selection of the right people with the right capabilities
	Guided and controlled growth path through the right training at the right time
	Reduction in mistakes in day-to-day operations
Technology and Infrastructure	*Technology*
	Concerns the equipment, hardware, software, procedures, and technical knowledge brought to bear in the firm's transformation of inputs into outputs
	Infrastructure
	Serves the organization's needs for transporting (all physical and technical resource) information across the organization and ties its various parts together
	The results of technology and infrastructure are as follows:
	Alignment between various technologies and infrastructural needs
	A solid and scalable foundation for future development
	Consistent platform in relation to information management

2.14   Role of CIO/Information Manager

Today's CIO is judged on the efficiency of information

The responsibility of developing and implementing an information strategy usually lies with the CIO (chief information officer) or someone with a similar function. He or she is preeminently capable of bringing the supply and demand of information into balance.

Matching the different strategies with afocus on information resources is very complex. This requires many skills on the part of the CIO or information manager. There is a strong similarity between the roles of the CIO (or information manager) and the role of a movie producer. The film director (regisseur) coordinates the efforts of various people involved in making a film and wears many hats. The CIO serves an analogous function within his or her organization. The CIO's role is in practice characterized by the fact that it does not fulfil just one single function. CIOs play a multitude of roles and carry out a variety of tasks. This is seen as the chief capability of this role: being able to perform a wide range of roles and tasks.

The directing (control) refers to the interplay between demand and supply – knowing what the demand side wants in order to be able to optimally translate the question to the supply side. The demand side is usually the business, which has certain needs and requirements. The art of a good translation (see below on translation step of information strategy) consists in listening; recognize the question behind the question and manage expectations. Based on the translation of the needs and

requirements the CIO starts talking with the supply side, usually the ICT department. Together they will discuss ways of answering the question from the supply side based as much as possible on existing resources. To do this right, the CIO must have different competencies.

Several competencies can be applied to both the CIO (or information manager) and the producer. Coach, director, conductor, performer, designer, artist, and manager – all are applicable and needed. The multitude of roles and competencies is needed in a variety of situations. Both the CIO and the director need to adapt to the continuously changing environment. CIOs (director) who are capable of inspiring others through their own strength, vision, and behavior will generate the best results within a given situation.

The metaphor of director (regisseur) is almost completely applicable to the role of the CIO. Another good metaphor is that of game leader conducting a game. The CIO or information manager can be seen as a game leader within a complex environment.

Game leader of a special game. There are no losers in the game

A CIO must possess the following competencies to execute his or her work:

Competency	Activity
Overview of situation	Stakeholder questions on all relevant information, needs and requirements to pbtaom a good and comprehensive overview of current situation
Companywide accountability	Accountability of actions and outcomes of all stakeholders
	Showing commitment to the whole organization
Set out shared policies	Encouraging the vision behind the policy direction for the whole organization
	The theming of problems as a result of conflicting goals or interests of stakeholders; articulating and promulgating policies
	Monitoring the progress of processes and, if necessary, arranging for timely adjustments
Organizing cooperation	Mobilizing stakeholders, stimulating enthusiasm, and inspiring others to contribute to the whole
	Connecting stakeholders (for example by combining goals)
	Monitoring the commitment and input from stakeholders as well as the results of cooperation by the whole organization

Source: Propper (2004a)
Directing is both a career and a competence.

2.15   Plan of Approach to Information Strategy

The approach for executing the information strategy is composed of three steps (Fig. 2.8):

Preparation
Analysis of design
Translation

Step 1: Preparation

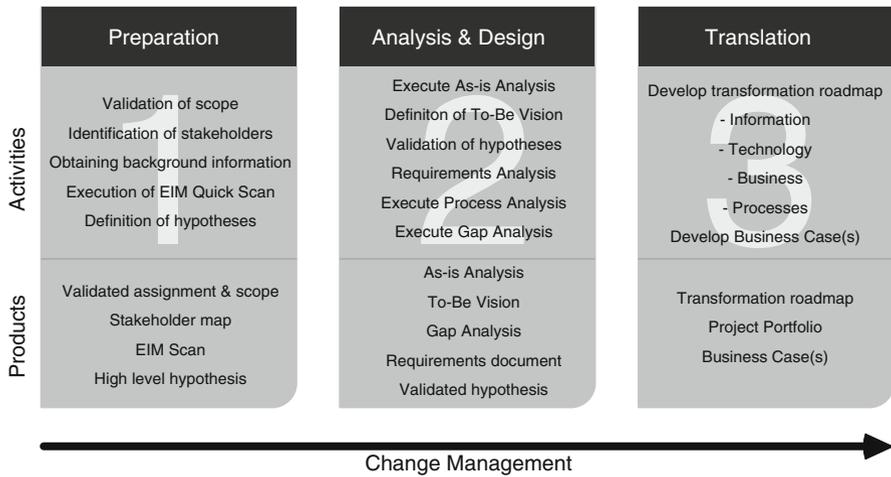|	Preparation	Analysis & Design	Translation
Activities	Validation of scope Identification of stakeholders Obtaining background information Execution of EIM Quick Scan Definition of hypotheses	Execute As-is Analysis Definiton of To-Be Vision Validation of hypotheses Requirements Analysis Execute Process Analysis Execute Gap Analysis	Develop transformation roadmap - Information - Technology - Business - Processes Develop Business Case(s)
Products	Validated assignment & scope Stakeholder map EIM Scan High level hypothesis	As-is Analysis To-Be Vision Gap Analysis Requirements document Validated hypothesis	Transformation roadmap Project Portfolio Business Case(s)

Change Management →

Fig. 2.8 Information strategy plan with respect to approach

The preparation step is crucial for the successful implementation of the roadmap. This step has its primary focus on defining and validating the scope, based on the results of the EIM quick scan and defined hypotheses. In addition, the identification of the stakeholders is of great importance. If one understands the forces within an organization, then the right tools and methods can be implemented to give meaning to the following steps.

Step 2: Analysis and design
The analysis and design step continues with the deepening of the defined hypotheses from the preparation step. At this stage it becomes clear whether a hypothesis or assumption is correct and what the impact is on the organization. In addition, the analysis step explores where the organization would like to be ("To Be" vision), independent of the current problems. Based on the As-Is (starting point) and To Be (destination) and the needs of the business, a gap analysis is performed. The gap analysis provides insights into the differences between the current situation (departure point) and the desired situation (destination).

Step 3: Translation
The translation step outlines the journey. The transformation roadmap provides a clear translation of the various initiatives required and relationships between these initiatives in the field of information, business, IT, and processes. Where necessary, a business case will be developed to add value and justification for an initiative to substantiate. Of interest in the translation step is that all the factors (either internally or externally) will be taken into account and weighed.

> The approach accelerates the time to value through prebuilt diagnostics, analysis, and design and transformation methodologies

What distinguishes this approach from other methods and approaches?

The journey is key. The destination may change

It is a journey together

Strong focus on preparing the organization's transformation

Strong focus on what is best for the organization instead of for individuals or departments

Primary focus on (information) problem area, impact on the business, and (possible) solutions; secondary focus on technique.

Start small, think big

2.16 Preparation

2.16.1 Validate Scope

In the preparation step, it is important to agree on the scope of the assignment, as it was in principle decided upon previously. The great danger in carrying out such assignments is having to deal with so-called scope creep. In the case of scope creep, the size of the problem will increase undetected or uncontrolled. At the moment a potential problem or problem areas are being investigated, on the basis of the defined hypothesis, different areas are encountered. These problem areas are all important and related to the original problem area. It is therefore important in advance that both contractors and clients establish clear guidelines about how to deal with new insights.

2.16.2 Stakeholder Analysis

Another very important activity during this step is the mapping of the various stakeholders. A stakeholder is someone who has an interest in the strategy to be developed. A stakeholder can be positive, negative, or neutral regarding the initiative. It is important to ensure that all stakeholders are identified within (and outside) the organization and that the picture or insight regarding the stakeholders and their attitude or interest is continually updated. The interests or concerns of stakeholders may change. It is therefore important to develop a plan that will be able to influence the different stakeholders. Ultimately they can affect the success of the rollout of the strategy.

2.16.3 Acquire Background Information

Also in this step, the necessary background information will be studied to define a wider reference context. This is necessary for exposing the problem area to different viewpoints and get a grip on what lives within and outside the organization.

2.16.4   EIM Scan

The EIM scan is used for the definition and preparation of hypotheses. The goal of this approach is to gain insight into the problem areas on the level of information within the organization. On the basis of this scan, a number of hypotheses can be defined that will be further investigated in subsequent stages of the information strategy's development. The defined hypothesis should include the following points:

The key business issues with a business rationale for the transformation program,
A vision of what the business change and technology enabler could be,
A high-level transformation design outlining how the change could occur.

The EIM dcan has the following steps:

1. Identify the information domains

   - Identification of information domains,
   - Formulation of core properties per domain and per degree of maturity,
   - Formulation of hypotheses in relation to the maturity model.

2. Verify information domains

   - Validation of information domains with client,
   - Identification of stakeholders' information domains,
   - Scheduling of appointments with stakeholders.

3. Execute EIM scan.

   - Stakeholder interviews,
   - Validation of hypotheses,
   - *Scoring of maturity model*.

4. Present results.

   - Presentation of the scan's important conclusions,
   - Maturity model.

In step 1 the client's organization will be extensively discussed together with the client, along with the market in which it operates, developments in that market, and the goals the organization has set itself. In collaboration with the client, the places in the organization where information plays a crucial role will be defined.

The information domains are defined based on the analysis in the first step. An information domain can be defined as a set of subjects belonging together on which information is present or should be present. Then, for each maturity level of each information domain, stereotypical statements are defined. These are statements that one could expect within an information domain at a certain level of maturity. The purpose of predefining stereotypes is that these statements help in determining the current level of maturity of the organization in the information domain under consideration.

In step 2 there is a thorough analysis of the information domains and the defined hypotheses. Knowledge of the organization and its goals is an important aspect of the EIM scan, which is why there is a lot of attention paid to the analysis during the review. Moreover, by discussing the model itself, it is often the case that the right people for the interview come forward. These are people with strong opinions about the functioning of the organization in certain information domains and the related ROI.

In step 3 the actual scan is executed. By means of interviews with different persons within the organization, an image is created of the current level of ROI in the different information domains. Moreover, this may create an image of the level of ambition that comes with the information domain. It is often the case that this image will have been created during the first step. If this happens, it is important to validate the image as soon as possible with the client because the risk will exist of making the wrong assumptions caused by a lack of knowledge regarding the organization's market.

At the end of step 3 it is then known what the ROI is within the different information domains and the level of ambition. Any differences that come to light here will serve as the basis for the further development of the scan.

In step 4 the findings of the EIM scan are reported, including the validated hypotheses. These hypotheses can be assigned to the findings regarding the differences between the actual and desired levels of ROI. A well-executed EIM scan leads to recommendations on improvements, including a prioritization of the expected of the recommendations on the organization's sustainable competitive advantage position. The actual current budgets and the capacity to make changes in the organization can be taken into account.

2.17   Analysis and Design

In the analysis and design phase the focus is on the "as is" and "to be." Additionally, in this step the hypotheses will be further investigated with respect to correctness. This will take place based on focus interviews, workshops, and various analyses.

It is very important to map the as-is situation within the scope of the problem. The as-is analysis provides insight as to where the organization is at this moment and how things are done. It also provides insight into the causes of the problems. The symptom remedy will generally not solve the deeper underlying problems. An organization should know where it stands if it wishes to define concrete goals. A different perspective and experience often underly the execution of an as-is analysis. The performance of an as-is analysis is often faced with a fair amount of trepidation. One has the impression that the focus will be on finding errors and inefficiencies in daily operations and that this understanding can lead to staff reductions (redundancies) or even dismissals.

However, the true aim of the as-is analysis is to bring to light the various resources and how these resources are deployed within the organization. The focus is on optimizing the various resources and increasing consistency. This is to ensure that

employees are inspired to be open to new and better solutions instead of limited thinking. The ultimate goal is optimization based on the best (can) use of corporate information (resource), with the higher purpose of supporting the business objectives.

Executing the as-is analysis provides an ideal opportunity to socialize changes. The as-is analysis can serve as the basis for the change process.

2.17.1 To-Be Analysis

In addition to the as-is analysis, the execution of the to-be analysis is equally important. The objective of the to-be analysis is to inspire stakeholders within the organization to define a healthy ambition level (vision) for the organization, without taking barriers into account. The purpose of the to-be vision is to set the bar so high that the vision seems utopian. This will drive the organization to try to fulfill the ambition. At a feasible level, people will be much less likely to set their sights very high. In the end the organization will be at a lower level because of the lower level of ambition. By challenging itself, the organization will achieve loftier goals. This leads to other behavior, entrepreneurship, and thinking in terms of solutions and not of constraints, with the final result being a better optimized implementation of the stated business objectives.

2.17.2 Validation of Hypotheses

The hypotheses from the preparation step are further investigated in the analysis and design phase. They are first based on various analyses (as-is process, requirements) and then refined through focus interviews and workshops. It is important to understand the hypotheses and to identify the causes of problems explicitly. Problems rarely, if ever, exist in isolation. They are almost always the result of a combination of deficiencies in resources. In addition, it may turn out that the hypotheses are refuted after they have been examined. This could lead to a realization that assumptions in relation to a hypothese are incorrect or that a reformulation of the hypothesis is necessary.

2.17.3 Gap Analysis

The gap analysis is performed based on the results of the as-is and to-be analyses. How big is the gap and what is needed, in which dimensions (information, people, process, and technology), to fill the gap? In practice it is usually a combination of activities within different dimensions that ultimately results in a solution to the actual problem (within the given problem area).

2.18 Translation

2.18.1 *Transformation Roadmap*

The final translation and underpinning of what is needed to solve the different problems within the organization and to get to the next level of maturity take place in the final step. Based on the gap analysis, a transformation roadmap is created that identifies various activities and initiatives to be implemented over time. Also part of setting up the transformation roadmap is defining the interdependence of the various activities and initiatives. By establishing the underlying relationships between the different activities and initiatives it is possible to create the right preconditions at the lowest cost (in time, money, and resources) to eventually be able to fulfill the higher objectives of the organization. Also, this step looks very carefully at so-called quick wins. Quick wins can achieve fast results at a relatively low cost without hindering other activities and initiatives. Quick wins will also contribute to positive acceptance by users. As outlined previously, this entails a journey for the organization to fulfill its higher objectives (Fig. 2.9).
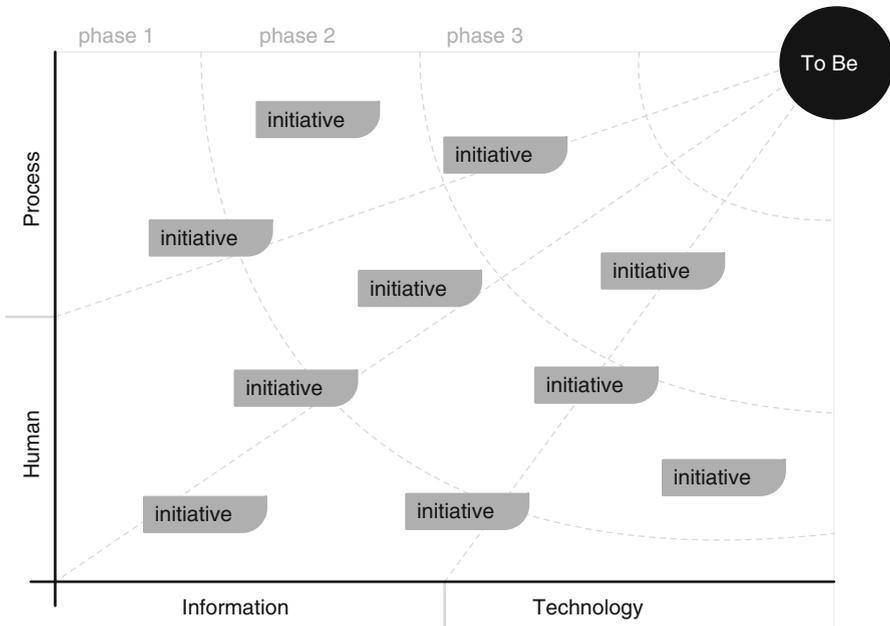

Fig. 2.9 EIM transformation roadmap

2.19 Business Case

The business case provides the rationale for the proposed change activities. The business case is very important from the point of view of supporting the actual decision making of the different stakeholders. Sometimes projects are necessary, but it is very important for an organization to see whether the investments pay off or not. The business case usually has the following main elements:

Provides confidence that action is affordable and benefits are achievable;
Is built logically and based on business benefits.

2.20 Critical Success Factors

To successfully develop an information strategy, the following factors are crucial:

Strong stakeholder management;
Key stakeholders on board early on; this will smoothen the data gathering process (interviews, workshops, background information) and keep the stakeholders there;
Focus on critical-information-related business issues (business outcomes);
Define goals together and confirm deliverables early on in the proces, then keep focused;
Get deliverables right first time so that sign-off process is quicker and smoother;
Focus on issues and solutions first, technology second;
Setting up of a responsibility assignment (RACI) matrix to get a clear picture of who is responsible or accountable for what.

2.21 Cases

Mortgage Application
Within a financial institution the release of a mortgage/taking on a mortgage was an especially long and error-prone process. The error sensitivity arose from the fact that data and content were stored and managed in different systems, independently of one another. Another reason was the privilege level of the different knowledge workers responsible for carrying out this process. This resulted in many errors such as a wrong name on mortgage documents, so-called pieces that were lost during the process of release, and long lead times. These errors affected mainly mortgage release efficiency and the quality of data and ultimately had a negative impact on customer satisfaction.
Through the development of an information strategy for the organization it was made clear that the actual problem was a combination of various causes in information management and information provisioning of the organization and not an isolated problem.

2.21 Cases (continued)

Based on this information strategy a number of projects were initiated (parallel and sequential) that ultimately resulted in the greater efficiency of mortgage releases, which became quick and error free (high quality). In addition, integration between the various systems was considerably promoted, meaning that data quality was optimized. This resulted in a high-quality process on mortgages, a drastic reduction in errors, improved customer satisfaction, and a higher ROI.

Increasing Importance of the Internet

Times are changing. Large groups of consumers use the Internet to orientate the selection and purchase of products and services. The growing importance of the Internet requires major adjustments in the fields of business, ICT, and information.

Consumers wish to conduct increasing amounts of business through the Internet. The move to the Internet places high demands on the information resource. Information must not only be of high quality but also available and delivered almost in real time. This includes not only transactions and financial data but also surfing and clicking by the customer.

The Internet is increasingly becoming a sales environment, where having and presenting the right information about customers/users is essential; for example, people need to be properly addressed and their information must match exactly.

To be able to cope with these changes, organizations must think in advance. Reactive response to changing needs leads to isolated initiatives. These initiatives may have their usefulness in the short term, but at the organizational level, they come with a long-term cost.

It is therefore important to develop a strategic plan to cope with the continuous changes in the field of information. Based on the strategy it develops, organizations can be flexible, scalable, and adaptable. Coordination of the various initiatives in the short, medium, and long terms will lead to improved competitiveness and a higher ROI.

EIM at a Pharmaceutical Organization

Within a large pharmaceutical organization compliance is one of the main drivers of optimization of information management. To be compliant, it is necessary to create a sound foundation within the organization with respect to data and content management.

The validity of information is the key to success. It is therefore essential to be in control as an organization and at all times be able to deliver valid information. To do so, the organization must control all sources of information and optimize provisioning of internal information. Analyzing the processes within the organization gives clear insight into information needs. It gives also insight into the different transfer moments between the different departments. In particular, the transfer of information between different departments generally causes problems. Optimization of the processes, governance, ownership, availability, and reuse of information is key to maintaining control.

2.22   Role of Change Management Within EIM

The EIM approach focuses on the integration of information from the perspective of humans, processes, and techniques.

So far, the process to achieve results – including the order of steps one needs to take to achieve the best possible results – has been the starting point – the process to achieve results. The role of technique in this process will be extensively discussed in subsequent chapters (Chaps. 3–7).

These things are important, but equally important is the role of human beings in the process. Human beings, as employees, a group of employees, or the management of an organization, determine to a large extent the success of integration.

Integration means change, and making changes is an unruly activity. In other words, change can be planned beforehand and conditions can be set for the change process, but in reality change always happens differently than expected. This has to do with the human component in the process.

People do not like change. Therefore, change should not only be well thought out, planned, and implemented, but above all the process to be followed in making changes should be well communicated. And that is often the crux of the problem.

Change goes through three phases: initiation, design, and implementation.

The initiation phase is at the organizational level; it is the phase in which employees must acknowledge the necessity for change, mentally let go of the old, and must be given a justification for the change. Letting go of the old and establishing an improved situation are central (people must understand why change is needed).

The design phase focuses on creating an alternative to the familiar, and it must offer real perspectives, show personal advantages, and demonstrate that the change will have positive effects. Everything focuses on getting the organization and the people moving in the direction of a solution. During this phase, the future is outlined (SOLL, to be; people must understand how the change will be made).

In the implementation phase, employees have time to get used to the new situation; they can work with changed conditions and the situation becomes stable, calms down. Anchoring the change in behavior is an important part of this phase.

The course of such a process at the organizational level is characterized by a group of supporters that quickly accept the innovation, a majority that is neutral and feel little resistance to the change, and opponents who fiercely resist the change (Fig. 2.10).

Whether or not an organization should pay attention to the opponents depends on their role in the organization (management, key users, or less important players). Sometimes some people will need to be convinced individually to participate. This may lead to pressure.

Individual handling of the change is a different story. The employee goes through a grieving process, saying goodbye to the old and getting used to the new (Fig. 2.11).

This could be accompanied by considerable levels of stress; it may lead to burnout and should be managed. This cycle can be processed in a time span ranging from a couple of minutes to a few months or even years. Obviously, the impact
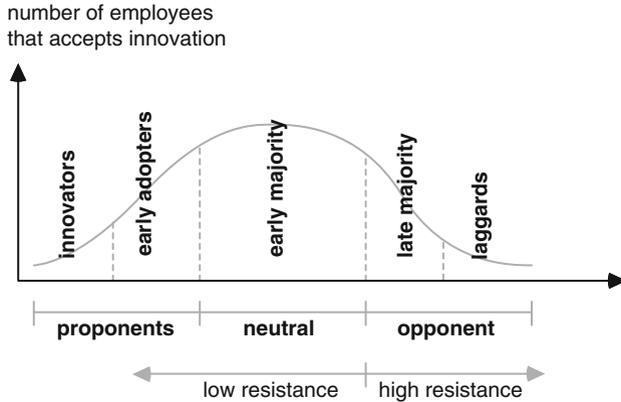
number of employees
that accepts innovation

innovators

early adopters

early majority

late majority

laggards

proponents   neutral   opponent

low resistance │ high resistance

Fig. 2.10 Number of employees accepting innovation

energy level

out of ballance

new ballance

doubt

integration

release

testing

develop vision

acceptance

1   2   3   4   5

1. Shock / denial
2. Anger / guilt
3. The pit
4. Explore
5. Integration / keep on

Turning point   time

Loss   Positive growth

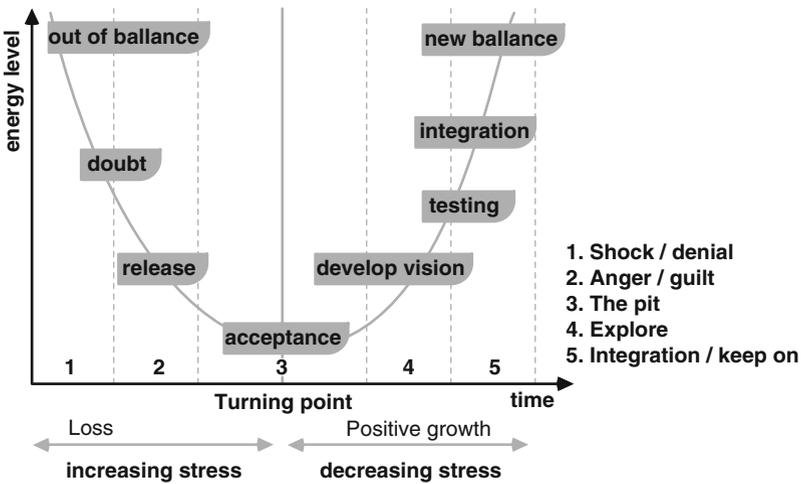increasing stress   decreasing stress

Fig. 2.11 Personal processing

depends on the resilience of the employee and how much the circumstances have changed. The overall resilience of all employees is called the adaptability or innovativeness of an organization.

So change is not just about the things that need to change, but also about changing the behavior of people individually and across the entire organization; it also includes the change strategy that is chosen to implement the change as well as the intervention method that is used when things do not go as planned.

Change management methods and techniques come in many shapes and sizes. There is not one specific method or technique that will be best for managing changes within the spectrum of EIM projects. In practice, we mainly use John

Fig. 2.12 Shared values model
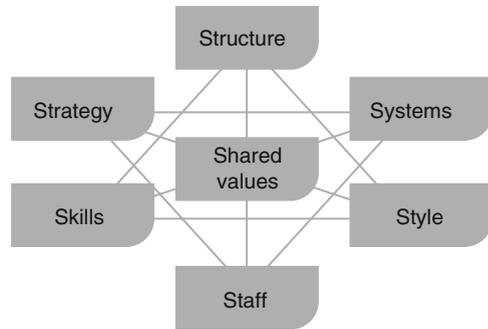
Kotter's eight-step change model (Kotter 1995). This model says that a process of change may be erratic, but one can always discover a number of steps that are taken in a more or less fixed order.

The first step is to establish a sense of urgency (if the purpose of the change is unclear, the necessity for change is not felt and everything will stay the same). The second step is creating a guiding coalition, in order words,some leaders should stand up and say this is what they want and this is what the organization needs. When a coalition has been created, it is time to develop a change vision and strategy: How are we going to do this?

Up until now, relatively few employees have been involved in the change. The organization had been pondering a plan for change. These steps are important, but the next step is essential: communicating the change vision with anyone who is interested. The tone has been set, and after that all employees that want to can be put into action. This is the actual implementation of the change.

Of course, not everything will go right the first time, but here and there the first successes of the change become apparent. This also needs to be communicated to obtain the support of the laggards (late majority and sluggards).

The experiences that the organization now has with the change will be a reason for improvements and for acclimating the employees to the new circumstances. The organization will have to remain alert that employees do not relapse and also monitor and anchor the change in the organizational structure or culture.

Overall, change presents a challenge for many people. Within BMP change is mainly about making processes run smoother (BPM), making decisions based on the available information (BI), or obtaining swifter access to better results (ESR) or a better survey of the (internal) knowledge (ECM). These are already complex issues, but combining or integrating them only increases the complexity.

McKinsey's 7S model (Pascale 1981) shows that change within EIM mainly concerns the systems (how work is processed), strategy (why we are doing this), and skills (employee competencies), and then partly the structure (organizational setup), style (how everything is managed), and staff (execution of staffing process). Finally, this interaction will affect the shared values (the common values and principles in the business culture) (Fig. 2.12).

Change actions within one field will always affect the other six.

In other words, even though it seems that, in many cases, an EIM project only involves the choice and implementation of a new application or redesigning the process, one must be aware of the effects the project has on all other aspects of an organization and the changes it entails for the employees, various groups, and the organization as a whole.