# Theme 3:
# Enterprise Content Management

## Enterprise Content Management ECM Definition

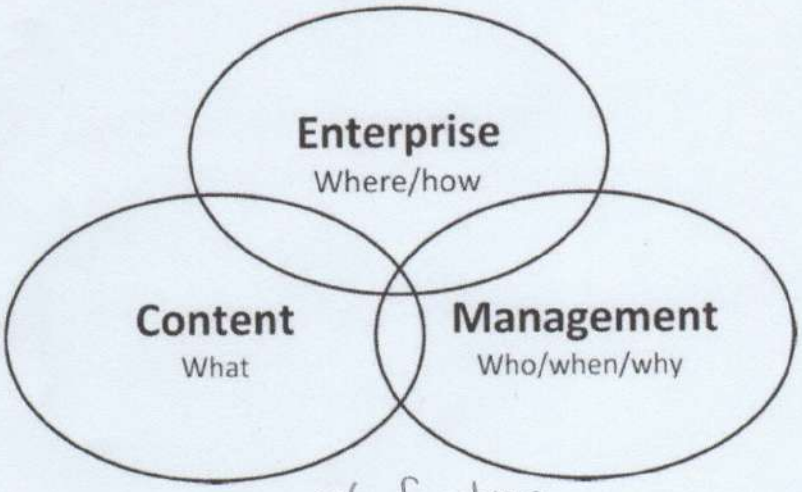
"The simplest definition of enterprise content management (ECM) is the management of information in all its forms across an organisation. This aims to capture, preserve and deliver information as a corporate asset in a consistent, natural and re-usable way, so that an organisation can sustain, enhance and tune its knowledge investment...ECM refers to the related strategies, methods and tools. ECM tools and strategies allow the management of an organisation's unstructured information, wherever and whenever this exists."(Cameron, 2011:2)

## Structured and unstructured content

| Structured | Unstructured |
|---|---|
| Corporate financial records inside an ERP or finance application (like Sage or QuickBooks) | Incoming invoices, packing slips or bills of lading |
| Employee data inside a human resources planning application (like Oracle PeopleSoft or Workday) | Resumes, tax documents and certifications |
| Customer data inside a CRM (like Salesforce or Microsoft Dynamics) | Emails, photographs or meeting notes |

Simply put, enterprise content management (ECM) digitizes, controls and automates the flow of unstructured information within a company, which is the messy information that exists outside structured database environments.

**Figure 0.3** The scope of ECM (Cameron 2011:2 )




- The **enterprise** perspective describes all the functions of distribution, application, publication, acquisition, capture and access in a uniform and pervasive nature without boundaries.It defines where and how ECM takes effect.
- The **content** describes all the rich components, information, data (structured or unstructured), records, rules, structures, topics and templates. It defines what makes upECM.
- The **management** discipline brings together facets of communication, processes, workflows, collaboration, interaction and exchange with a plethora of stakeholders.It describes who is involved in ECM, and why and when they interact.

## ECM includes...


## Document

- A work in progress
- Only in its final form does it have the possibility to become a record
- Not all documents become records
- Not all records are documents (database, database elements, film, sound recording)

## Document management system:

- "Document management systems are designed to assist organisations to manage the creation and flow of documents through the provision of a centralised repository, and workflow that encapsulates business rules and metadata. The focus of a DMS is primarily on the storage and retrieval of self-contained electronic resources, in their native (original) format." (Robertson, 2004)
- Control the life cycles of documents – how they are created, reviewed, published, secured, consumed and disposed of or retained (Microsoft, 2007)

From document to record

## Record

- "Information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business" (ISO 15489-1-2001:3)
- "In a business context a record is a by-product of the business transaction" (Keenan in Lambe, 2007:227)
- "A record is a document or other electronic or physical entity in an organization that serves as evidence of an activity or transaction performed by the organization and that requires retention for some time period" (Microsoft, 2008)
- Provide evidence of business activity
- Can be in any format
- Has business value (sometimes only for short periods)
- Final statement about the transaction – once "declared" it must remain unaltered

## Record management system:

- The ISO 15489: 2001 standard defines records management as "The field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records, including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records.

## Business process management/workflow

- Workflow or business process management (BPM) provides the mechanism for managing the delivery of objects used in the work between editors or users. Over time ECM evolved to encompass business process management, to aid the management and distribution of information.

## Collaboration

- ECM also increasingly included internet-based collaborative environments. These allow users to compile and create content in a secure and regulated manner, and distribute it ~~pervasively.~~ Spread widly between a group of people

## Imaging

- Imaging accommodates the need to scan paper documents and the need to view electronic documents. It covers both aspects of business document integration—capturing documents from various sources including scanners, faxes, email, and other office applications, and retrieving documents for users in many different environments, including in remote offices and via the Internet.

## Portal

- An Enterprise Portal is a framework for aggregating and integrating information, people and processes across the organization. Internet, Intranet and Extranet sites can be enterprise portals. Portals usually have specific audience group (e.g. employees, customers, suppliers, etc) and can be personalized. Enterprise Portals provide a "gateway" to information and documents, provide security (authentication & authorization), and, have robust content management system, which allows many users to contribute and update the content. Portals can improve organizational effectiveness, they can accelerate/automate shared business processes, and they can facilitate information sharing across boundaries for better business insight.

## Knowledge management

- ECM provides good knowledge management, thus permitting an organisation to
    - sustain and recognise the contributions of all the stakeholders who add value to the organisation;
    - provide guidance from a number of key perspectives for the organisation;
    - supplement knowledge in the future and in different scenarios;
    - make information universally available, and linguistically clear.

## Digital asset management

- Many modern digital asset management systems have a number of features that are geared towards the storage of rich media assets such as:
    - AI-powered tagging that scans the contents of an image upon upload and automatically creates tags, which help to easily locate the image at a later date
    - An option to preview video files within the DAM environment so you can play the video without needing to download the file
    - Editing functionalities such as cropping and image resizing for use on social media platforms

## Digital rights management

- Digital rights management (DRM) is intended to enforce restrictions on the use of digital content after it has been delivered to its intended recipient. This type of protection, which stays with the content after delivery, is often referred to as persistent protection. Note that persistent protection is designed to protect the content from unauthorized actions by the legitimate recipient.

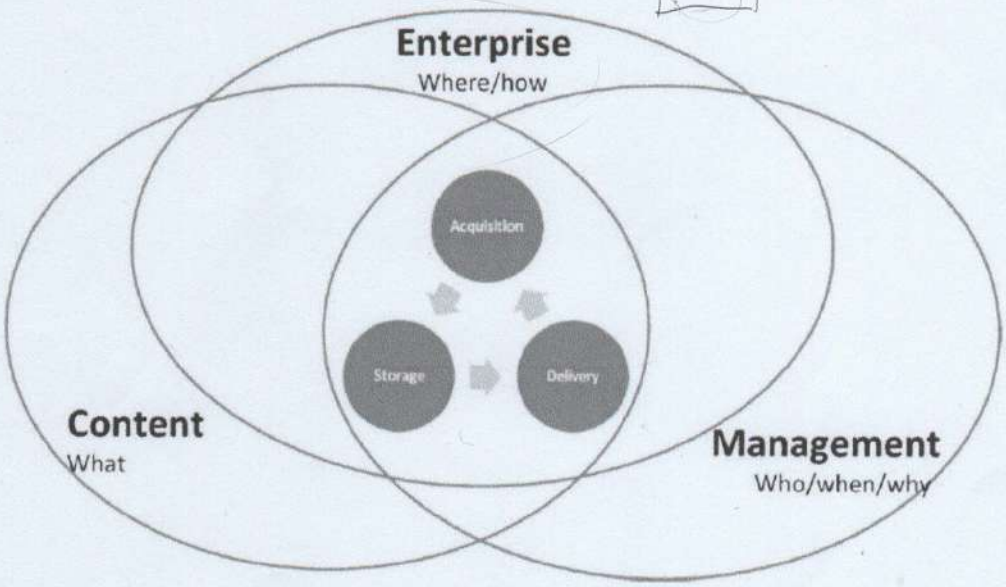
## Web content management

- WCM is generally considered a subset of ECM with the primary difference being that WCM is focused more on web content whereas an enterprise content management system is integrated into daily processes.

## ECM and the information lifecycle

- Strategies, methods and tools to capture, manage, store, preserve and deliver content
- Specifically manages organization's unstructured information

**Figure 1.1** The content lifecycle (Cameron 2011:6 )




### Acquisition

Enterprise

- Central capture repository for dispersed acquisition systems from desktops, internet, scanned documents, etc.

Content

- Acquired in various forms, paper or electronic transformed to agreed organizational formats.

Management

- Capture management set to bulk scan and cataloguing protocols and indexing rules which includes metadata protocols.
- Initially everything is accepted into the system – reviewing content objects gives clearer attributes and gives context to its inclusion.

### Storage

Enterprise

- Distributed, federal or virtual (cloud) or storage farms as repositories.

Content

Content.

- Content objects could be stored including different versions, review attachments or overlays to capture the transition or change in an object. What can be stored.

Management

- Uses process management to establish content version, control authorship rights, distribute content to those nominated.
- Digital rights to protect amendment of content.
- Tools to extend storage capacity or manage retention life of content for destroying at the correct time.

## Delivery

Enterprise

→ content consumers / web based application

- Delivery to browsers provide options for distributing information. Businesses will cost mechanism and make available per set criteria.

Content

- Information can be presented on the web page, encapsulated in downloadable electronic documents or provided in print. how the content is presented.

Management

- Search technology included through the mechanism (→ way) of workflow or process business management to deliver work between editors and users.

## Content creation vs. content consumptions vs reuse of information

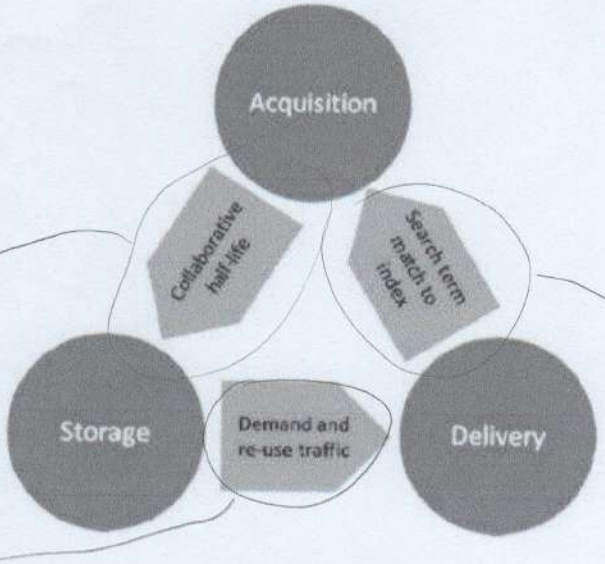
What is your style of content consumption?

- Always on
- Evenly self-moderated
- Block and tackle
- Binge

## Measuring and valuing content

- **Challenge**: assess the asset value of information for a business plan
- Asset value needs to be assessed throughout lifecycle and overall asset value

**Figure 1.3** Valuing content lifecycle




### Collaborative half-life measure

- The number of sustained content objects which are generated how much The system has
- Number of interactions for each object version.

### Search term match to index

- Value of content is assessed by determining the extent to which the attributes are completed for a specific content class – what is the indexing scheme effectiveness?
- Indexing scheme can then be finetuned to improve delivery or reduce the burden of categorization.

### Demand & reuse traffic

- Delivery: statistics are gathered on number of times content is retrieved for re-use.

how much was it retrieved?

## 3.Establish how organisations use ECM

### Organisations value what they know: Six core capabilities

1. Relevance: why information is important;
2. Retention: what information needs to be kept;
3. Timing and throughput: when the information needs to be acted upon;
4. Responsibility and contribution: who manages the information effectively, and how they are motivated and rewarded;
5. Ubiquity: where the information can be accessed;
6. Analysis and meaning: how the information is interpreted, created and managed.

### Relevance and retention of information

Organizations = natural conduits for information: acquire & generate information through systems, processes and people.

- Simple organizations:
  - No automation or paper to digital transformation: people arbiters of information
  - Capacity of organization to manage information limited by reliance on people
  - Relevance and value of information based on human judgement
- Complex organizations:
  - Growth in channels of information management
  - Growth in variety of stakeholders involved in information generation
  - Growth in new information structures (design & products)

Good ECM practices ensures mechanisms in place to capture, manage and distribute – catalogue assists in maintaining, transforming and valuing content objects

### Timing and throughput of information

- Timing and throughput important factor in understanding when best to work with information
- Depends on the type of organization:
  - Conservative / slow response
  - Highly active – rapidly information producing organizations
- ECM considers collaboration need and process management in relation to pace and demand
  - Difference in front office vs back office (e.g. Banks)

### Contribution and responsibility for information

- People in organizations analyze information, define the rules, algorithms and limitations in which organization operates.
- Knowledge workers are valued for their analysis of a specific subject area or expertise.
- Young people gather information quickly yet superficially – skills to be developed in ability to make comparisons, retain and manage information. Should engage in deep analysis .
- Challenge = final milestone test
- Roles:
  - Librarians ensure information is up to date and correctly referenced
  - Designers scrutinize, index and determine if information is relevant and represents an asset
  - Analysts improve and complete the information to determine trends

- Every organization has the mission, ethics and culture to create a product or service. ECM addresses the problems of the past by reducing the idiosyncrasies and inconsistencies manifest in the collation of different perspectives by engaging the right people in the right roles.

## 5 Ubiquity of information (want to make information common)

- Organisational knowledge is sustained by an organisation for its lifetime.
- Freelance work more common and linked to a project and a project lifespan. Output of knowledge workers rarely sustained beyond project. Add to difficulty of recognition and makes retention challenging. Organisation needs to recognize and distribute knowledge for posterity. Wasteful if not done.
- Goal is to make information ubiquitous and available beyond natural boundaries.
- ECM = good knowledge management:
    - Sustain and recognize contributors of all stakeholders who add value to organization
    - Provide guidance from a number of key perspectives for the organization
    - Supplement knowledge in the future and in different scenarios
    - Make information universally available

## 6 Analysis and meaning of information

- Great deal to gain from specialists in one discipline work in another – wisdom from one perspective can bring groundbreaking methods for solving problems in another
- Cross fertilization technique for breaking barriers to knowledge growth and allows different domains to overlay
- Quantity of data compared to information and knowledge is large but data is low in quality – improving quality in data through multiple dimensions to have context and deeper meaning e.g, business intelligence
- Any knowledge system must
    - be accumulative and incremental
    - engage with all interested parties
    - be universal
- Challenge to above = language and taxonomy, but ECM advocates and facilitates the creation and use of taxonomies to establish a common language and meaning throughout the organization and markets in which they operate.

# 4.Define an ECM maturity model to gauge an organisation's current and future ECM use

## Maturity models

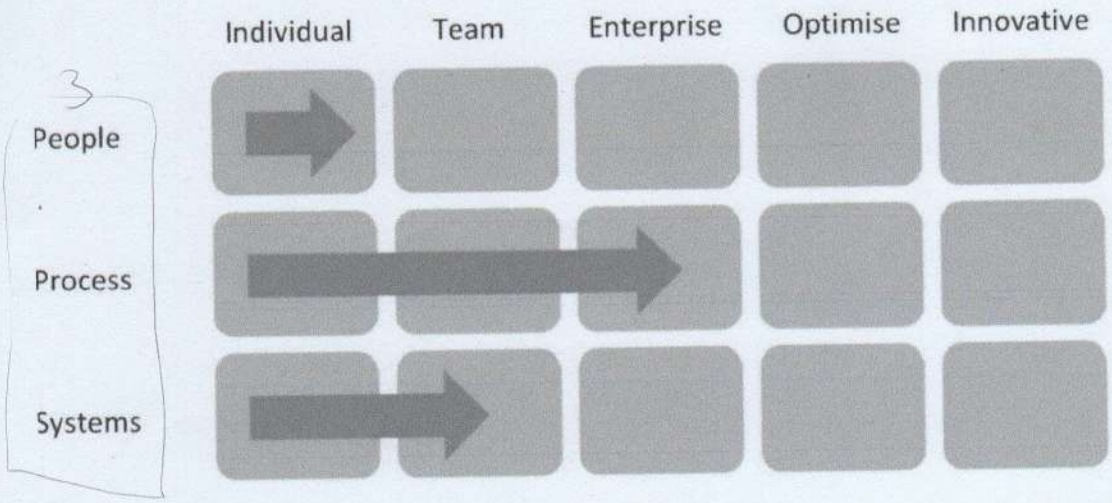
- Transformation is not an overnight affair. For the organisation to achieve the improvements brought by an ECM approach, change needs to happen in stages: in deliberate steps within a programme .
- Each step in accomplishing the ECM goals requires an assessment of where the organisation is. In line with business case planning there must be some means to measure improvements necessary to sustain the programme .
- The ultimate goal is an organisation that is well governed by creating an information management strategy.
- Maturity models originated in the mid -1980s, aimed at objectively assessing whether contractors have the capability to complete a project, by evaluating and improving their development processes. Maturity models have also been used extensively in project management, maintenance, information technology and risk management.
- The content maturity model has been derived from those original models but with a focus on ECM disciplines and content specifically within an organisation. It is a set of stages which encapsulate the behaviours, processes and systems in an organisation that can reliably produce effective outcomes.
- Maturity models can be used by organisations in the same market to benchmark against the capability of their competitors, determines the starting point, others' experiences and provides a common language, a framework for prioritisation, and a means to define the measureable improvements.

## 5 stages of the content maturity model

a) individual;
b) team;
c) enterprise;
d) optimise for acquisition;
e) innovate for growth.

Aimed to:

- co-ordinate people, processes and systems to work from the same organisational perspective and;
- to improve the organisational perspective towards innovation.




## People Dimension

- People, their support, skills, training, relationship to risk and reward and performance management.
- Organisational culture from a collaborative environment perspective, informal hierarchies and email chains.
- Capabilities considered in the maturity model in terms of people:
  - Timing and throughput - when the information needs to be acted upon;
  - Responsibility and contribution - who manages the information effectively
  - Analysis and meaning - the information is interpreted, created and managed.

## Process Dimension

- Many varieties such as standards, guidelines, policies, record, information management policies and the workflow of everyday processes as information passes through the business.
- Processes have defining characteristics that match the capabilities within the content maturity model:
  - relevance – why information is important;
  - retention – what information needs to be kept and when it is to be destroyed;
  - timing and throughput – when the information needs to be acted upon;
  - responsibility and contribution – who manages the information effectively

## Systems Dimension

- Hardware, software and applications which create, store and manage information – can be paper-based or automated electronic systems.
- Systems should have characteristics which can match the maturity model capabilities such as:
  - retention – where information needs to be kept;
  - timing and throughput – when and whether the information can be processed;
  - responsibility and contribution – the security and tracking of managing information;
  - ubiquity – enabling the information to be accessed from anywhere;
  - analysis and meaning – helping the interpretation, creation and management of the information.
- All of these capabilities are in some respect improved, managed and measured using ECM systems.

## Individual Stage

- Individual perspective as the owner of the information who is in daily control of it.
- Default in small organisations with charismatic leadership and individuals have personal goals and rewards:
    - Information is non-uniform seem subjective and vulnerable to criticism or interpretation, lack diligence or be inconsistent in detail
    - organisation is likely a collection of self-interested personalities, which flourish at the expense of the organisationInevitably there is a distinct lack of organisational innovation.
    - The market in which such an organisation works tends to be mature, a lot of wasted effort and slack capacity within the cash-cow of a single product or service – success is down to an individual instead of the organization
    - The future for the organisation mostly based on luck and ruthless ambition
    - Compliance not common, mavericks, non-conformist players and egos in this environment, and a high risk of non-compliant processes which are difficult to audit, monitor and correct.

## Individual stage domain characteristics

People dimension: rarely work together.

Process

~~Documentation~~ dimension: poorly defined and unavailable documentation.

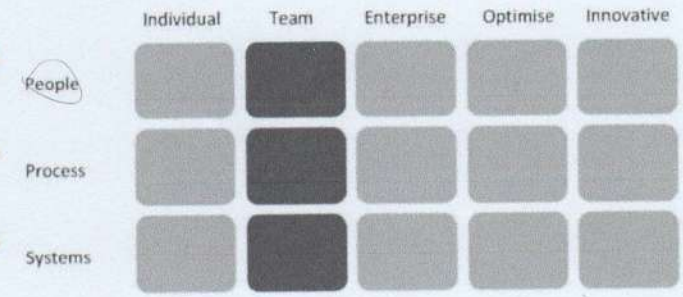
System dimension: Personal (paper and electronic), rarely shared or networked

## Team Stage

- Designed to represent ECM's natural organizational groups or teams working on projects. It is usually created in an ad-hoc manner rather than set in the divisional structures in which operational groups exist.
- In ECM there is an organisational aptitude to consolidate information and bring together knowledge and people. Systems start to work at functional and departmental levels.
- Although silos of information still exist, at least all people in a particular division or department work with common information sources and start to share resources
- Bring information across team boundaries to use consistently.
- This interim stage towards building an enterprise may see little or no contribution between groups who are struggling to survive. There tends to be no co-operation contributing to the greater good of the organisation.

## Team stage domain characteristics

- Organised to manage projects at departmental level
- process management tools start making an impact, workflow systems can manage the processes, processes are likely to be consistent
- Team environment covers shared information sources and common applications which add information to common resources

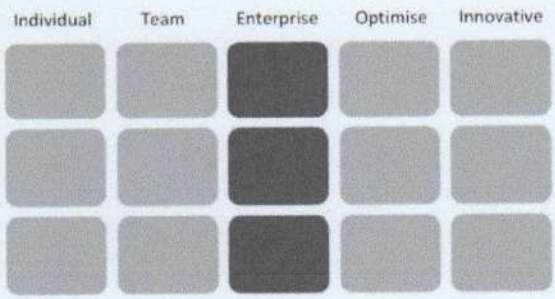


## Enterprise Stage

- Information is geared to meeting enterprise and organisational objectives and measuring effectiveness with KPIs.
- Departments, skills and competencies are joined end-to-end in fluid ways to satisfy the needs of the organisation and its customers.
- Probably still overlaps in capability between teams and departments.
- Increased information flow and channels as well as people with an information role. Little optimisation across enterprise. Organisation will know value of content and information.
- Processes become candidates for optimisation (core or non-core). Decisions well informed through use of ECM and enterprise-wide knowledge sharing. Maintaining customer relationships cost reduced.
- Still fundamental issues but enterprise is aware of future direction

## Enterprise stage domain characteristics

- People have propensity to think beyond own department and consider overall effort and value. Cultural perspective quality is very important.
- clear and consistent processes now defined across the enterprise there is better governance of processes and change. Organisation works towards serving customer rather than self.
- Information management systems are centralised with security and access well organized; all information growth is funded centrally and at an enterprise level. Single version of the truth starts to permeate.

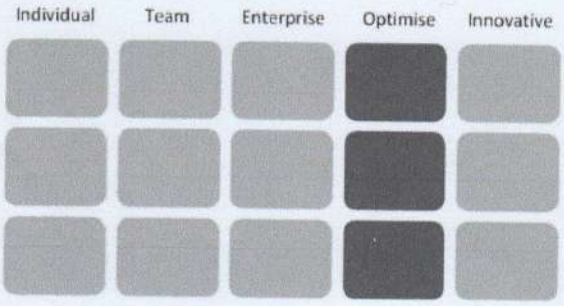



## Optimise Stage

- Under this stage enterprise can adopt other business models and information sources readily from external parties. Once an organisation has this ability to optimise acquisition, it is ready to manage the final stage of natural innovation.
- All facets of a business must be ready if it is to merge and acquire new businesses and information successfully. This then allows it to acquire innovative regimes and products which will sustain it in the future. Successful acquisition and incorporation of businesses drive capability to build mechanism to adopt and optimise new processes.
- Organisation considered more adaptable and optimised whilst responding to changes. If we rely on unverified and untrusted information then we may become slaves to it. Overreliance on such information becomes a blind spot. Information governance guides an organisation in managing and sustaining trust in information and its sources.
- Investment in partitioning and staging technology or platforms is required to bring external parties into the intranet or extranet whilst keeping organisation safe.

## Optimise stage domain characteristics

- Level of motivation is evident – compliance by all participants, level of risk understood
- Processes optimized to maintain power, speed and agility during choppy market conditions. Process feedback approach encourages employees to participate and establish collaboration from the ground up.
- Good migration strategies and capability to upgrade systems. Customers inextricably linked to business




## Innovative Stage

- Innovation is continuous and happens without the organisation stalling. Its components are all optimised and adapted to change.
- Innovation is the prime approach for growth.
- Being pro-active is the best approach.
- Organisation have the components and drive to make innovation happen.
- The ultimate goal for the organisation is to define its market.

## Innovative stage domain characteristics

- All knowledge workers are proactive, are able to react quickly to incoming issues but given time to manage creative thinking. Structure of organisation is loosely coupled, allowing scope for assembling everyone in interdisciplinary project teams at short notice
- Processes completely represented in a flexible and universal process map which includes natural language rules and exception processing. All people in the organisation use the map on a regular basis whilst simulating and testing new process streams.
- Infrastructure should support creativity through open communication, organised collaborative spaces, and manage policy and compliance complexity, foster clarity in business processes for everyone through ECM, from sources inside and outside the organisation