



Business Process Control at Shell International Petroleum

Presented by Tony Stewart
RivCom
to Lifecycle MSC 2002
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This talk

- How Shell transformed its core business process model
- from a static document
- into an interactive knowledge management framework
- that supports process improvement and harmonisation
- on a global scale



Outline

- Background
 - the client
 - the model
 - goals and challenges
 - RivCom's role
- The project
 - solution components
 - four stages
 - model creation
 - process integration
 - communication
 - knowledge management
- Conclusions



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The client

- Shell International Oil Products
- Major oil company
- World's largest retailer
- Serving 150 group companies worldwide
 - Historically: Providing support, advice and good practice guidance
 - Increasingly: Needing more centralised control to ensure efficiency, interoperability and agility



The model

- Downstream Business Activity Model (DBAM)
 - a model of Shell's entire downstream business, from acquisition of crude oil to end user delivery
 - developed by a high-level core team
 - focused on managing strategic processes
 - process definitions, information flows, key performance indicators, best practices...
 - comprehensive, but relatively shallow
- Highly confidential
 - this talk is about concepts, not content
 - unfortunately, no screen shots



The model

- Evolution from 1991 to 2000
 - traditional printed document...
 - database-driven set of documents...
 - electronic delivery of an online model with links to related information...
 - early use of XML-based publishing technologies



The project

- 'DBAM4' - major upgrade to the DBAM
 - Timeline: February 2001 to July 2002
- Goals
 - Harmonise business processes worldwide
 - drive down costs
 - Support new business activities and new types of business relationships
 - Facilitate adoption of new technologies and business paradigms
 - become a more 'agile' business
 - Enable detailed analysis of selected processes
 - top-down or bottom-up



Challenges

- Global constituency, but no 'command and control'
- Decentralised project teams lacked shared methodology or experience
- Volume, complexity and diversity of process information
- Demand for support exceeded available resources
- Resulting models were inconsistent in terminology, approach and structure
- No mechanism for sharing process-related knowledge across the business



RivCom's role

- Partnered with the DBAM custodian
 - developed and maintained the core model
- Provided continuity of knowledge
- Proposed and implemented the new framework and architecture
- Developed and documented the toolset and supporting methodology



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Solution components

- Paradigm shift
 - Before
 - comprehensive model developed by a central team
 - necessarily high-level
 - little implementation support
 - After
 - set of interlinked models of varying depth
 - developed by distributed teams of key managers and SME's
 - substantial implementation support

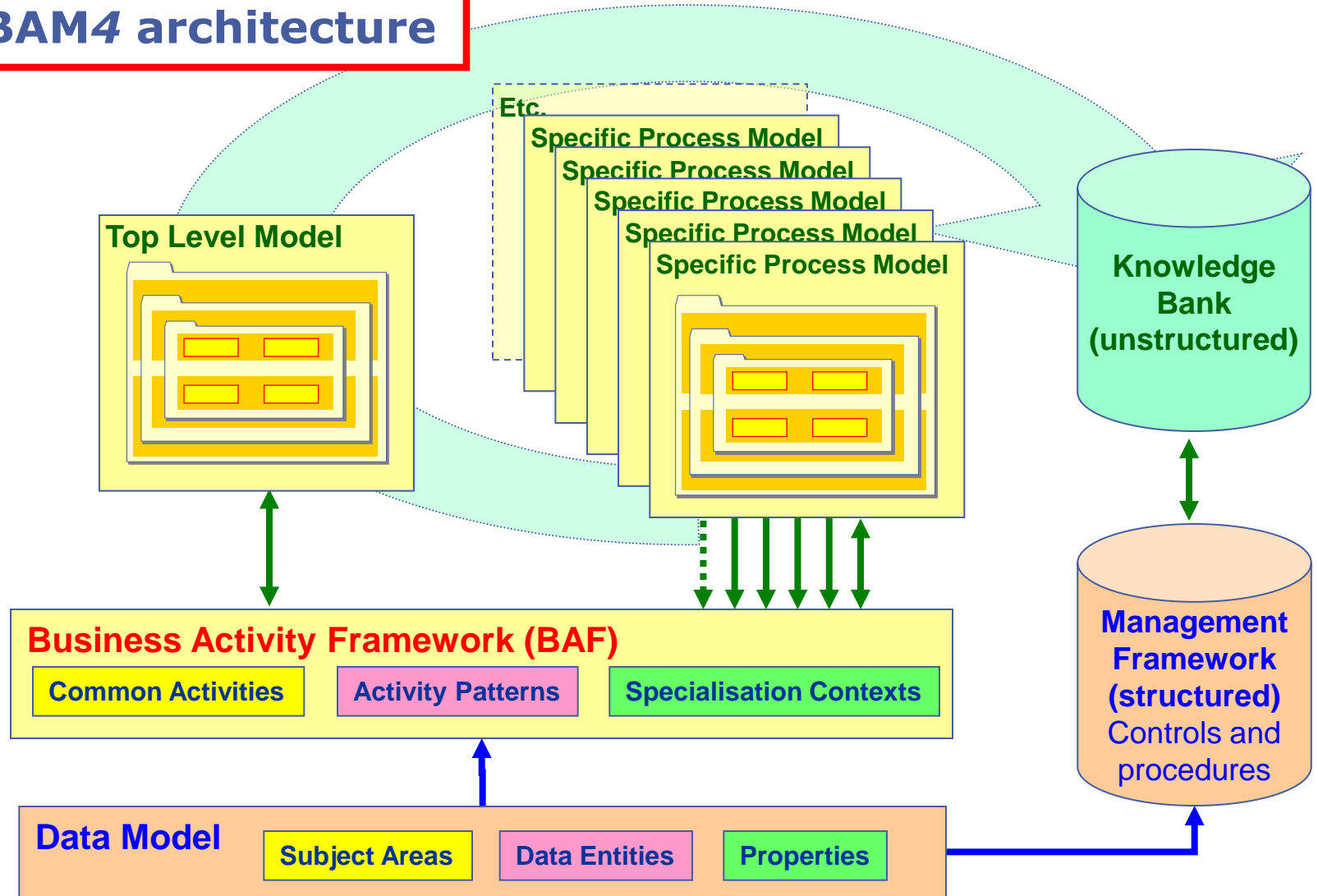


Solution components

- Tools and technology
 - tools to support distributed development
 - technical architecture to merge the resulting models
 - standards-based systems to generate published views of the information
 - integration with Shell's document management system
- Support / concepts
 - top level model to provide context and example
 - central meta-model to enable integration of process models
 - methodology, guidance and appropriate hand-holding



DBAM4 architecture





Four stages

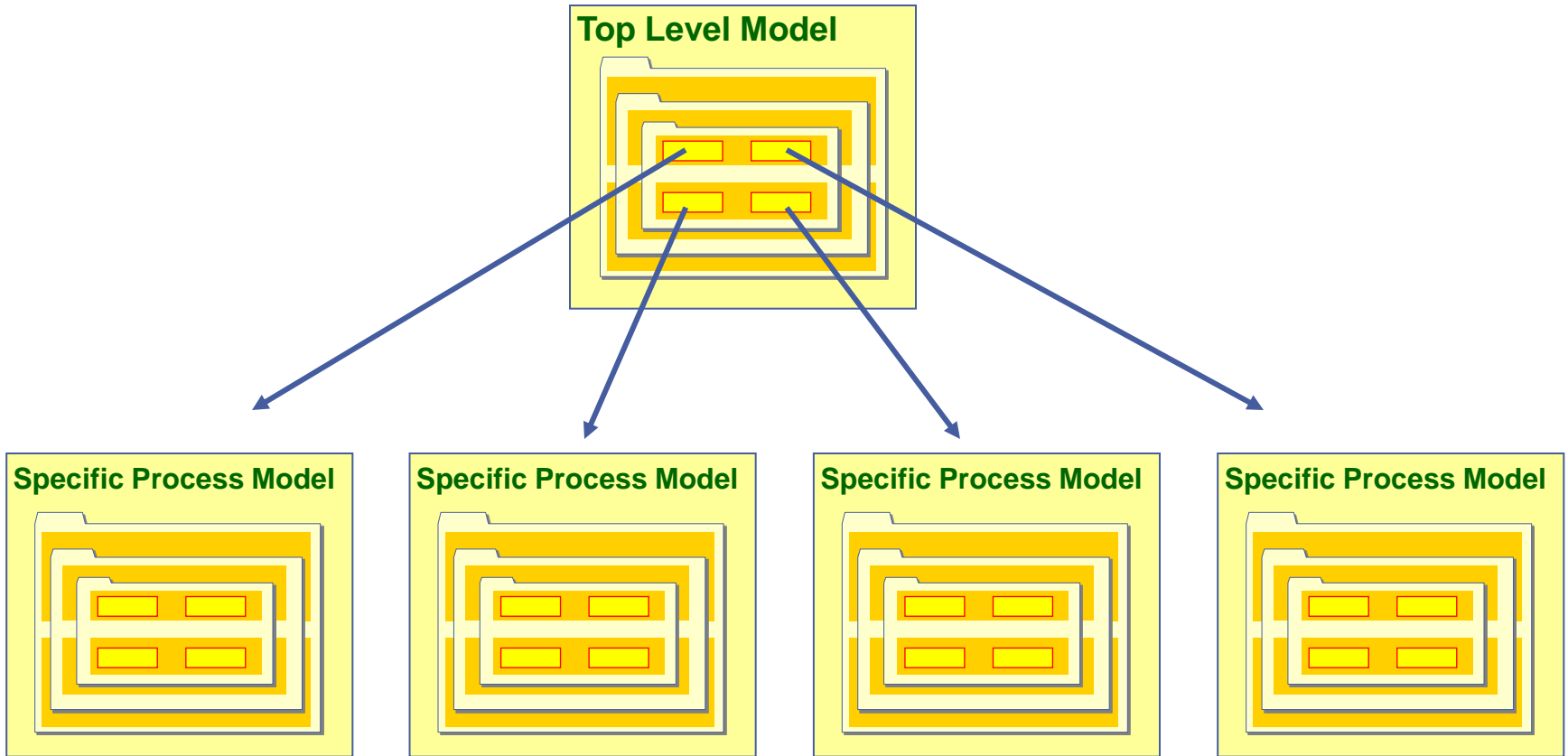
- Empower business teams to **create** useful process models
- **Integrate** resulting models with each other and with a core data model
- **Communicate** the new processes across the organisation
- **Add knowledge** via a process-oriented knowledge management framework



Create

- Start with the top level model
 - provides orientation and alignment
 - exemplifies good practice

Top level and specific models





Create

- Start with the top level model
 - provides orientation and alignment
 - exemplifies good practice
- Provide a focused, stripped-down methodology
 - approach, terminology, categories of information
- Supported by lightweight tools for information capture...
 - guide users to enter the recommended information
 - familiar, MS-Office based (Shell desktop standard)
 - minimal training required

Process definition template (sample)

	A	B	C	D
1	Process/Activity Name			
2				
3	Objective - Briefly describe the business objective of this process/activity (WHY it is carried out)			
4				
5	Description - Briefly describe the nature of this process/activity (HOW is carried out)			
6				
7	Subprocesses/Subactivities - What are the subcomponents of this process/activity (WHAT it is made up of)?			
8				
9	Trigger - This section describes the business event or events that cause this process/activity to be initiated			
10	Event	Communication channel	Timing	Volume/Frequency
11	Name the event(s) that trigger this process/activity	Name the channel through which the trigger event is communicated	Indicate the timing of the trigger event (WHEN does it happen)	Indicate how often the trigger event occurs
12				
13	Inputs / Outputs - List the inputs and outputs of this process/activity, and the sending or receiving process(es)/activity(ies)			
14	Input - Name of input	Comes from - Process/activity code	Output - Name of output	Goes to - Process/activity code
15				
16	Duration - Describe the typical or average duration of this process/activity			
17				
18	Key Performance Indicators - What should be measured to determine the degree to which this process/activity is achieving its objective			
19	Measure - Describe what should be measured		Target - Indicate the target to be achieved, if known	
20				
21	Tools & Resources - List key tools or resources needed to support or enable the process/activity.			
22				
23	Master Reference Data - List master reference data items that are used by this process/activity.			
24				
25	Other Relevant Features - Use this section to document any other features or considerations necessary for a full understanding of the process/activity			
26				
27				



Create

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- Supported by lightweight tools for information capture...
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 - minimal training required
- ...and a publication/review mechanism



Integrate

- Goals
 - integrate multiple models into a coherent view
 - integrate process and data perspectives
- Benefits
 - share best practices across related/similar processes
 - identify candidates for process harmonisation
 - align technology with processes

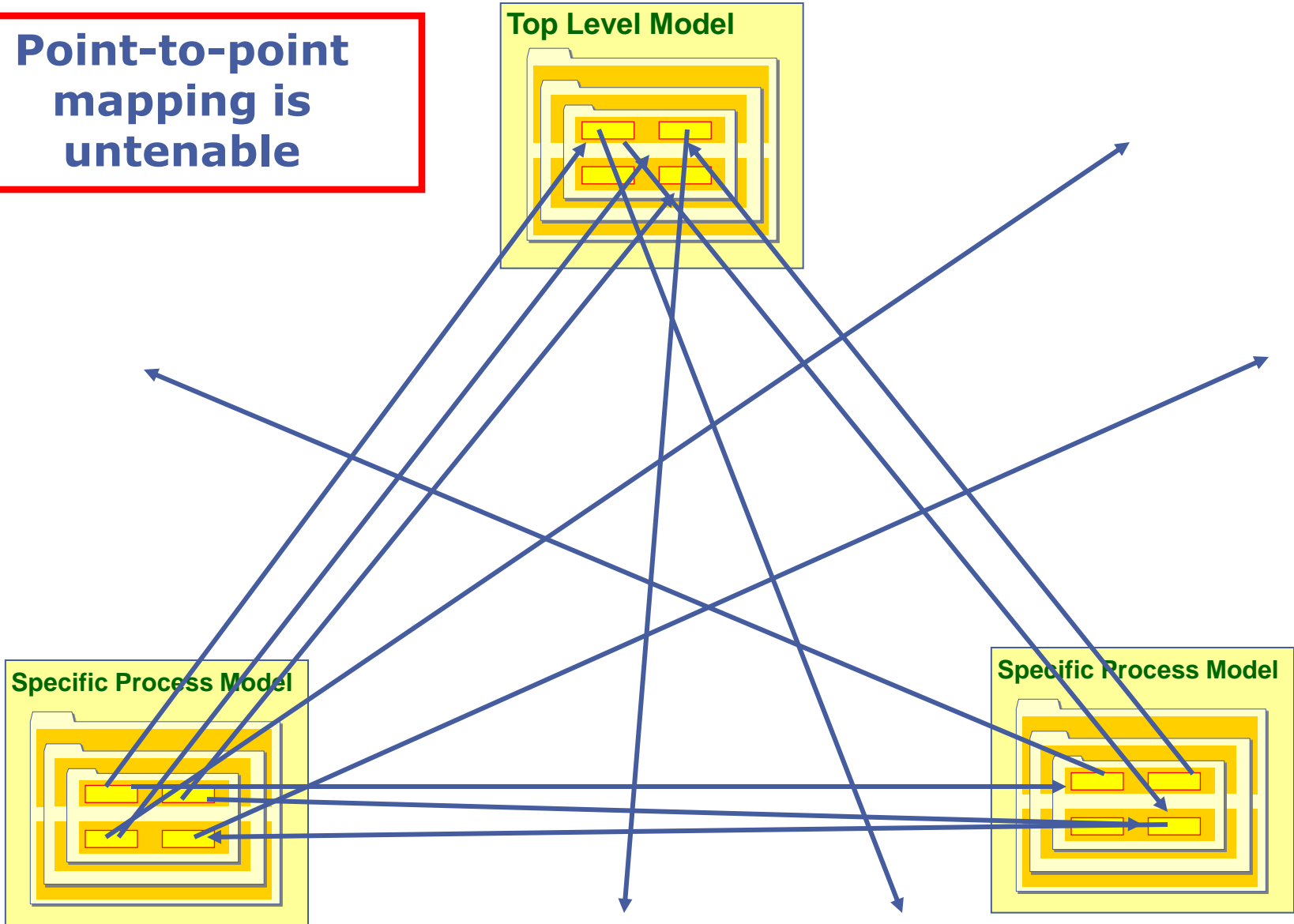


Integration concepts

- Identify related processes and activities in different models
 - ‘map’ them to each other
 - create pointers that will underpin later navigation
- 2 dimensions
 - vertical: drill down from top level into specific models
 - horizontal: compare and connect similar activities
 - in same or different models
- ‘Process junction’ approach addresses both dimensions

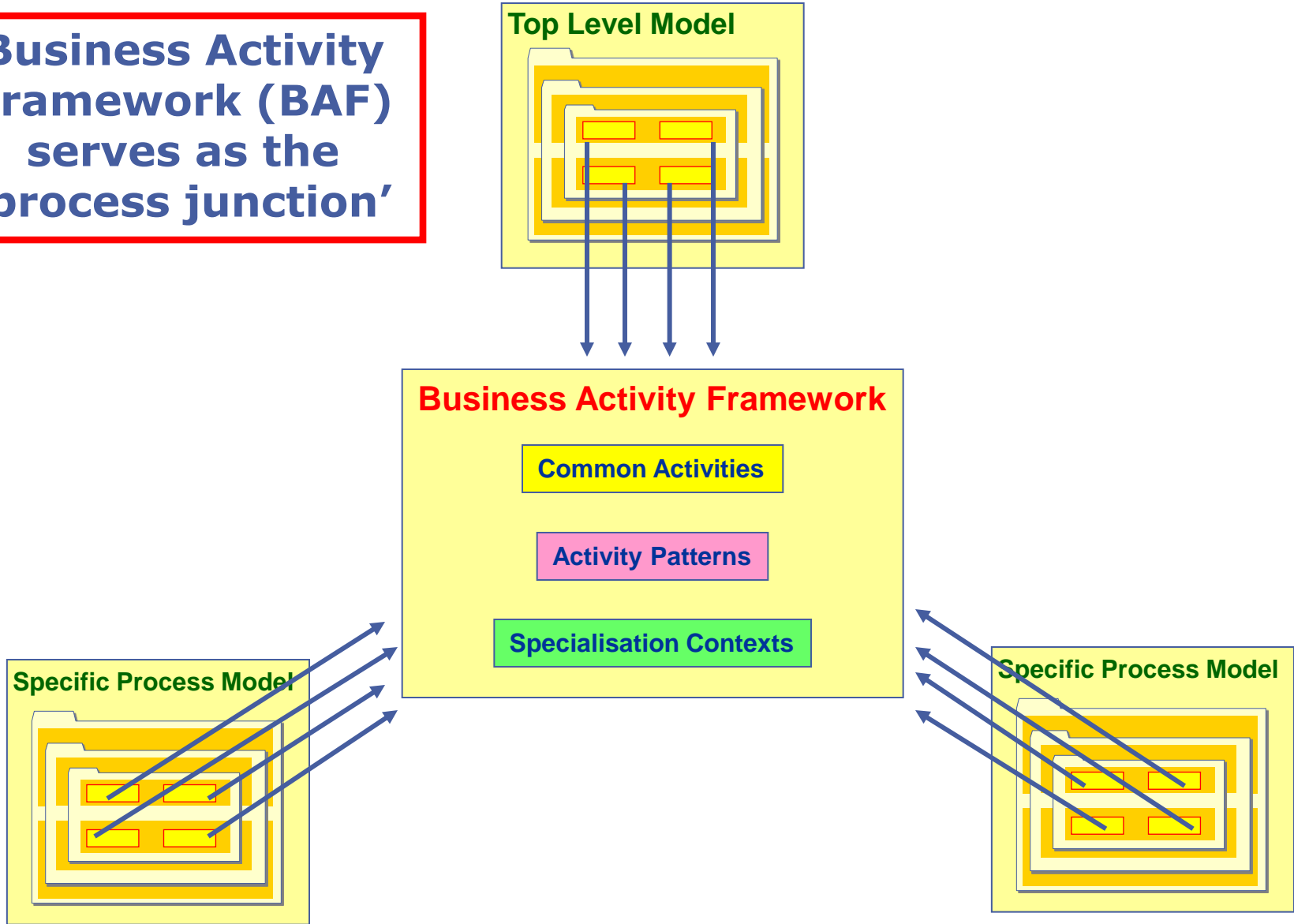


**Point-to-point
mapping is
untenable**



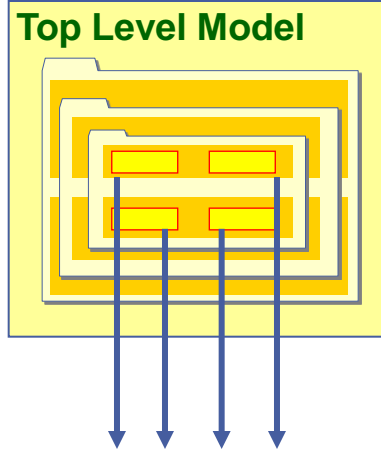


Business Activity Framework (BAF) serves as the 'process junction'





BAF consists of 3 'meta-models'



Generic business model

- "develop market"
- "sell"

Specific areas, entities and objects

- "retail"
- "trading partner"
- "warehouse"

Business Activity Framework

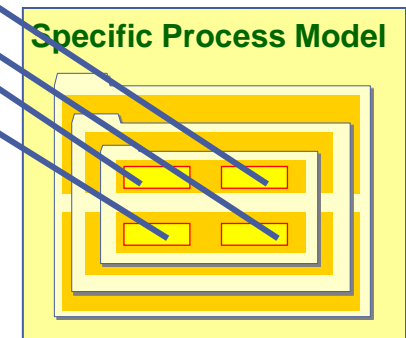
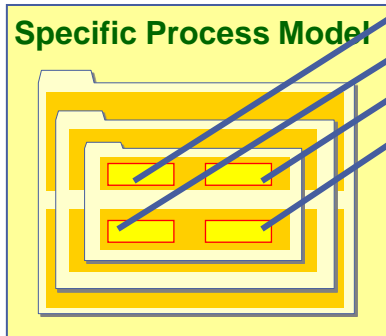
Common Activities

Activity Patterns

Specialisation Contexts

Generic activities

- "manage project"
- "define strategy"





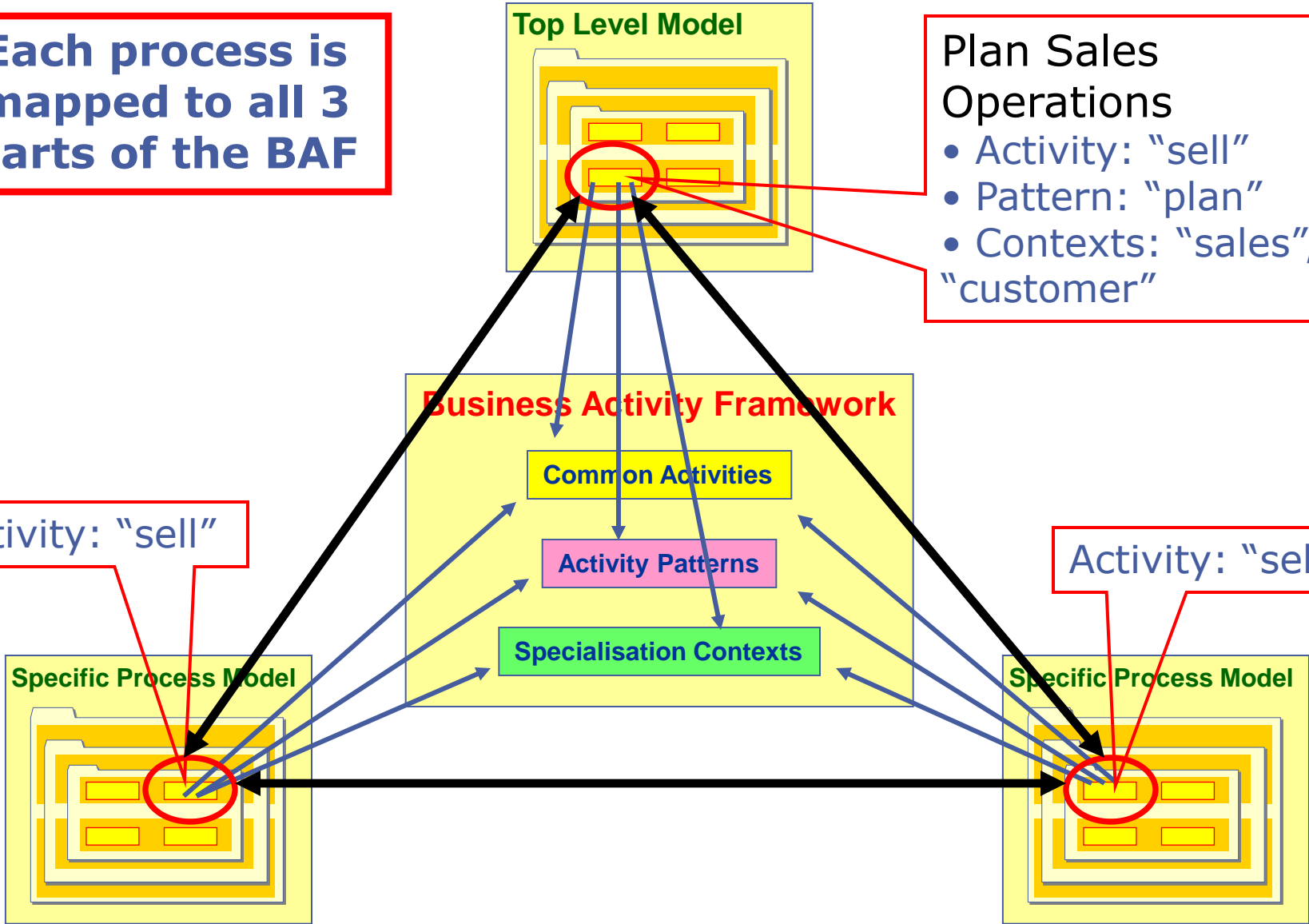
Each process is mapped to all 3 parts of the BAF

Plan Sales Operations

- Activity: "sell"
- Pattern: "plan"
- Contexts: "sales", "customer"

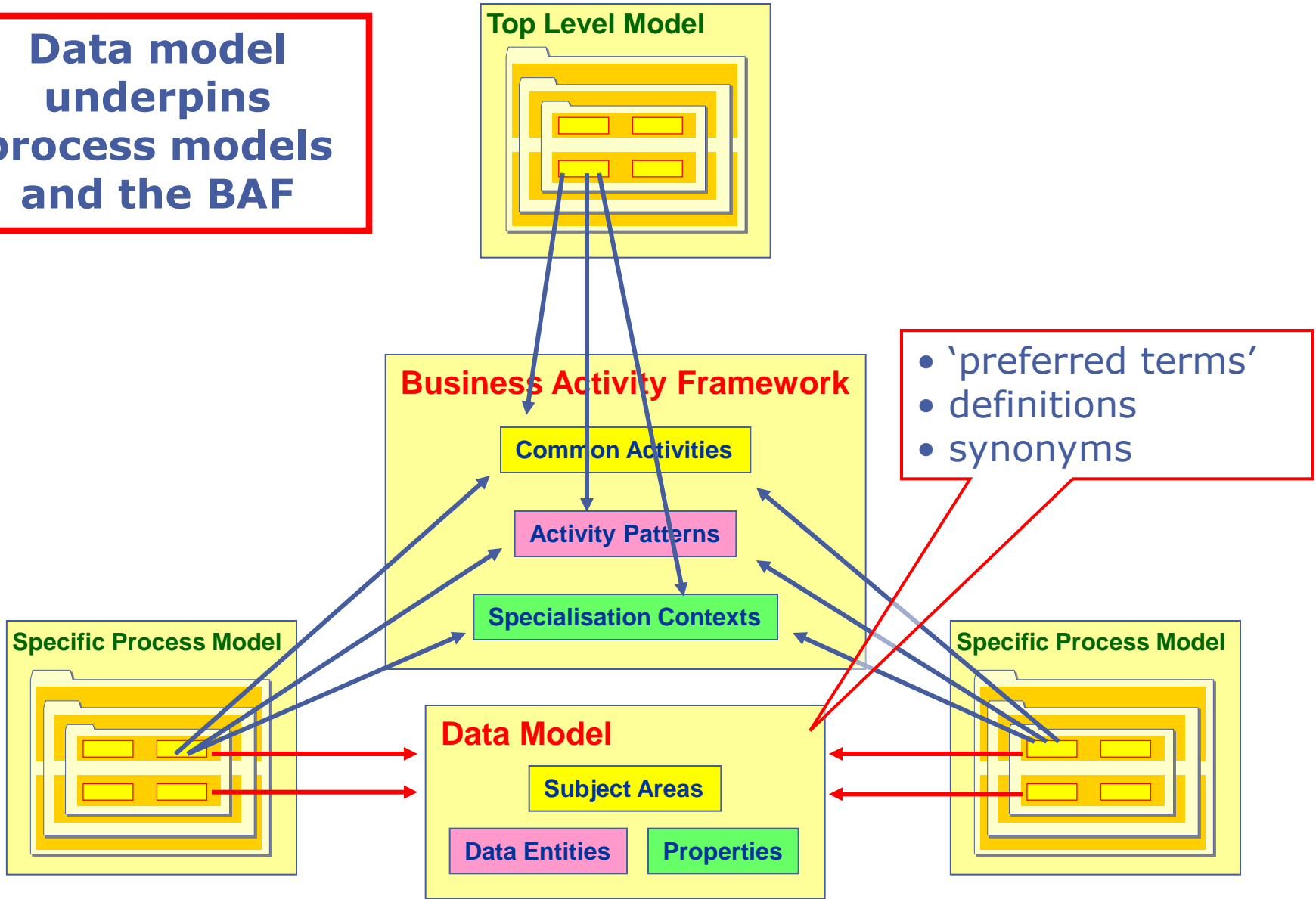
Activity: "sell"

Activity: "sell"





Data model underpins process models and the BAF





Integration links

- From a process/activity to...
 - related processes and activities, including those in other models
 - by type of Business Activity Framework (BAF) relationship
 - data definitions and preferred terms
- From a BAF item to...
 - processes/activities related to the item
- From a data entity to...
 - processes/activities that use the data entity
 - as Inputs, Outputs, Reference Data



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Communicate

- The plan
 - leverage Shell's Intranet infrastructure
 - enable users to 'surf' the process models
 - implement Usage-Centred Design
- UCD workshop results
 - search... navigate... download
 - use the process page as a navigation hub



Process/Activity page is also a navigation hub

Process Definition

Name:

Purpose:

Description:

Resources:

	Name	From/To
Inputs	<u>data entity</u>	<u>activity name</u>
Outputs	<u>data entity</u>	<u>activity name</u>
Master Ref. Data	<u>data entity</u> <u>data entity</u>	<u>activity name</u> <u>activity name</u>

Related Activities

- Same Common Activity

- activity name

- activity name

- Same Activity Pattern

- activity name

- activity name

- Same Business Context

- activity name

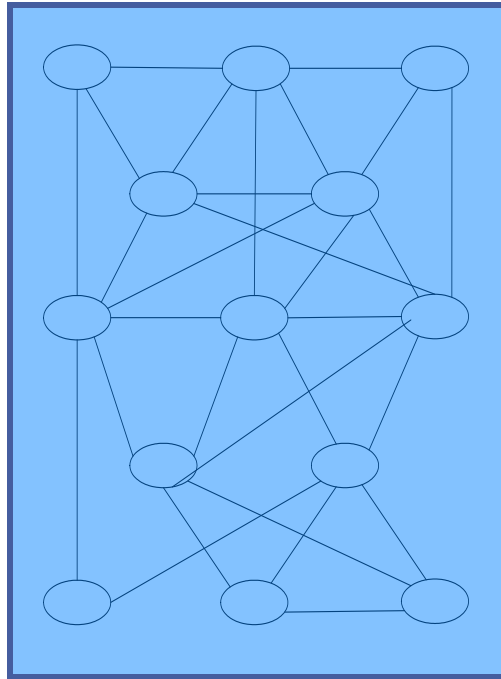
- activity name



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 - use the process page as a navigation hub
- Technology
 - create the HTML via a series of XML transformations

Transformations - 4 steps from input to output



Process models
in separate
spreadsheets

Topic Map (XML)
containing entire
network of
information



```
<descrip>
.....
</descrip>
<links>
.....
</links>
```

```
<descrip>
.....
</descrip>
<links>
.....
</links>
```

```
<descrip>
.....
</descrip>
<links>
.....
</links>
```

NewsML (XML)
'document' for
each
process/activity



```
<HTML>
<head>
</head>
<body>
.....
</body>
```

```
<HTML>
<head>
</head>
<body>
.....
</body>
```

```
<HTML>
<head>
</head>
<body>
.....
</body>
```

HTML/CSS web
page for each
process/activity



Communicate

- The plan
 - leverage Shell's Intranet infrastructure
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 - implement Usage-Centred Design
- UCD workshop results
 - search... navigate... download
 - use the process page as a navigation hub
- Technology
 - create the HTML via a series of XML transformations
 - generate controlled search metadata to feed Shell's search engine

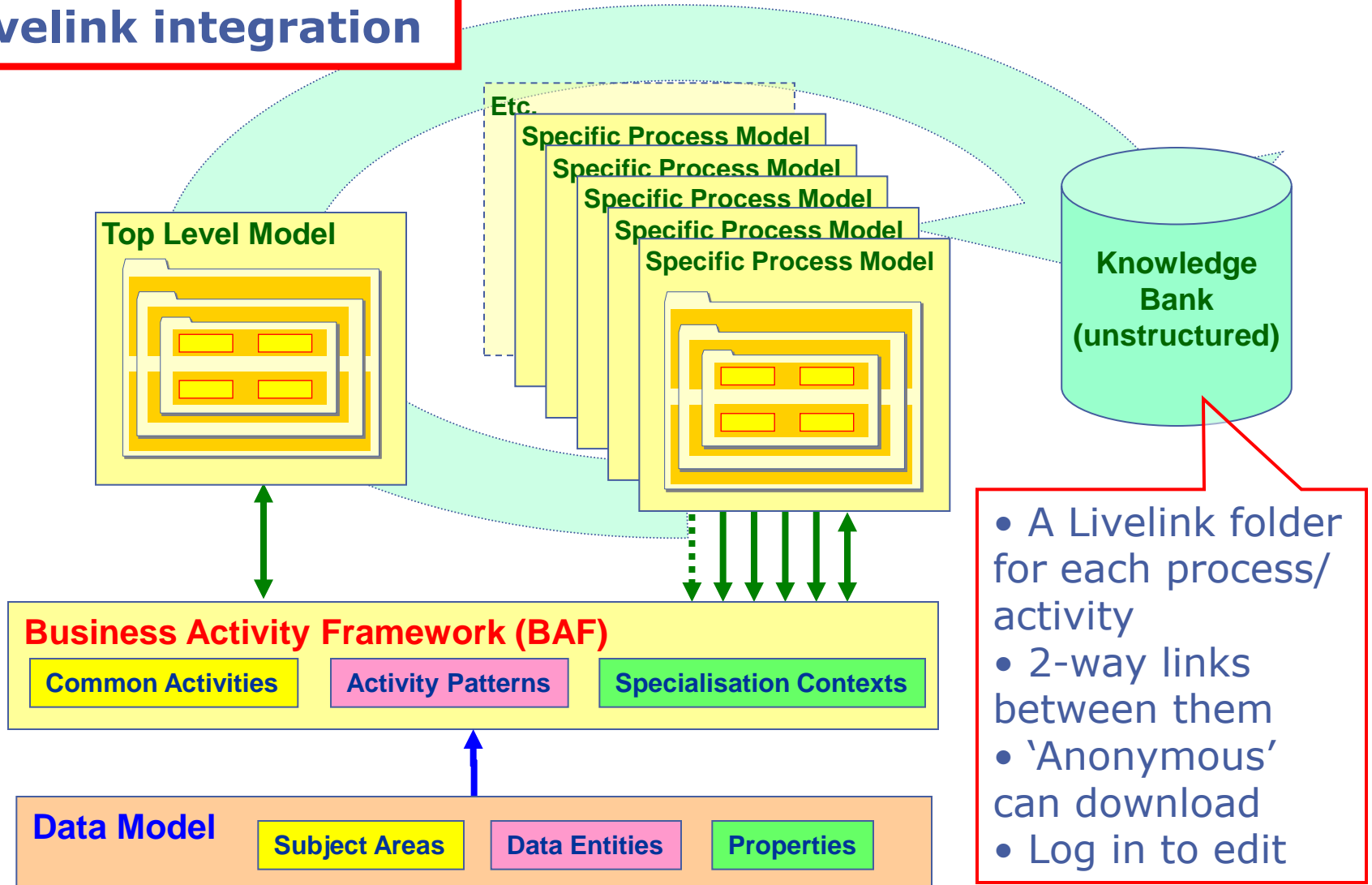


Add knowledge

- Goal
 - provide an ongoing knowledge management framework for process-related information
 - support implementation of the processes
- Concept
 - published process models make an excellent KM portal
 - capitalise on search and navigation
 - related activities lead to related information
- Challenges
 - integrate with Shell's existing system (Livelink)
 - control quality and quantity of content



Livelihood integration





Livelihood content

- Types of information vary according to the levels of the processes
 - higher levels: strategic management information
 - lower levels: task and procedure support
- Controlling quality
 - during model development, each project team “owns” its folders
 - once team disbands, central librarian takes control



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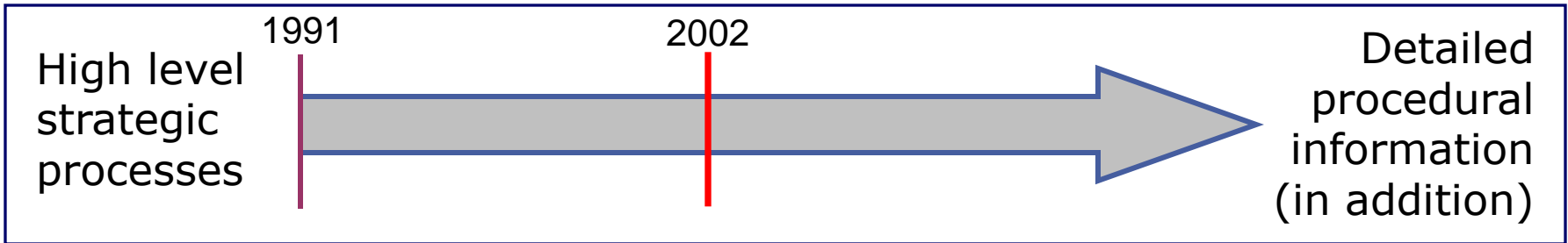
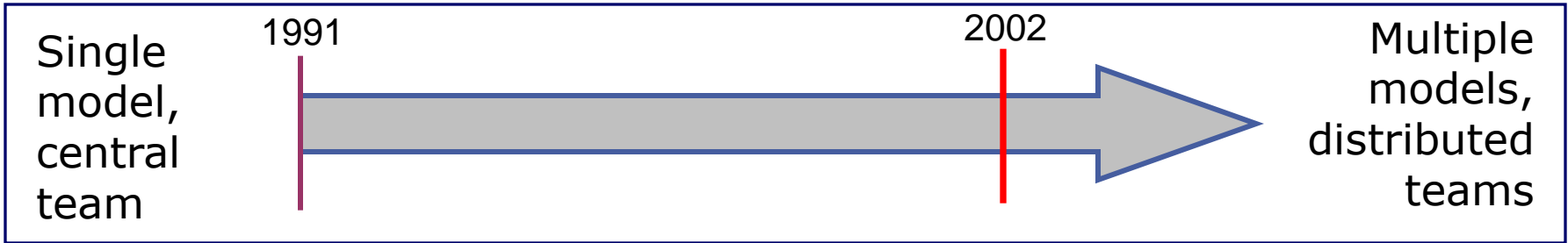
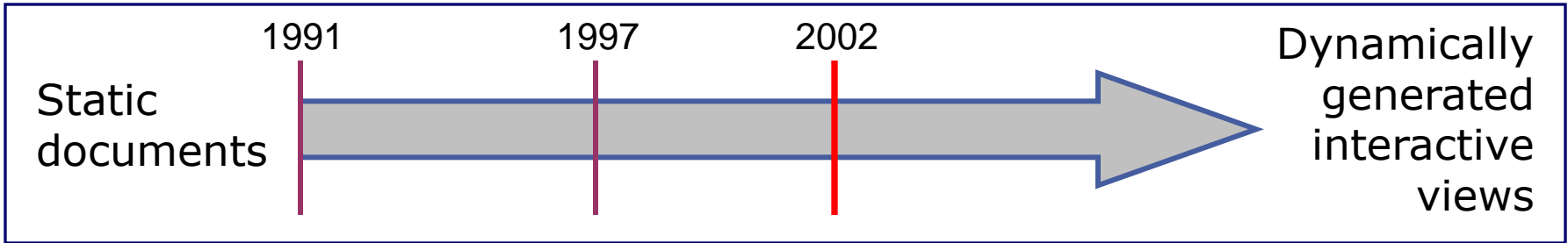


Success

- Tools and framework successfully launched in August 2002
 - multiple projects under way
- Shell is now in a much better position to
 - manage its essential business processes
 - allow the business processes to be harmonised across the organisation
 - research best practices and learn from past decisions
 - align its applications with current processes and activities, and with vendor and partner processes as necessary
- but the work is ongoing...



Three ongoing journeys... in incremental steps





A point of pride...

“RivCom has done an excellent job of working closely with us to understand our business needs and respond to them appropriately. They have somehow managed to balance a solid theoretical and academic approach to modeling with a practical ‘get it done’ approach to completing the work. They have consistently proven to be a valued business partner.”

Business Process Advisor
Shell International Petroleum
Company, Ltd.



Thank you for your attention

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