

# Workflow Modelling

(Sharp & McDermott)

# Method

Frame the Process

Understand the current (“as-is”) process

Design the new (“to-be”) process

Develop use-case scenarios

# Process Enablers

## Workflow design

- *Workplan for responding to an event*

## Information technology

- *Focus on information systems*

## Motivation and measurement

- *Explicit and implicit reward systems*
- *People do what they are measured on*

## Human resources

- *Knowledge, skills and experience*
- *Training, organisational structure, job definitions ...*

## Policies and rules

- *Internal and external*
- *May be obsolete*

## Facilities design

- *Workplace design and infrastructure*

# Context Framework

*(aka a FW for putting analysis of Bps in context with analysis of IS Requirements)*

Mission, strategy and goals

Business process

Information system

- Presentation
- Logic
- Data management

# Modelling techniques

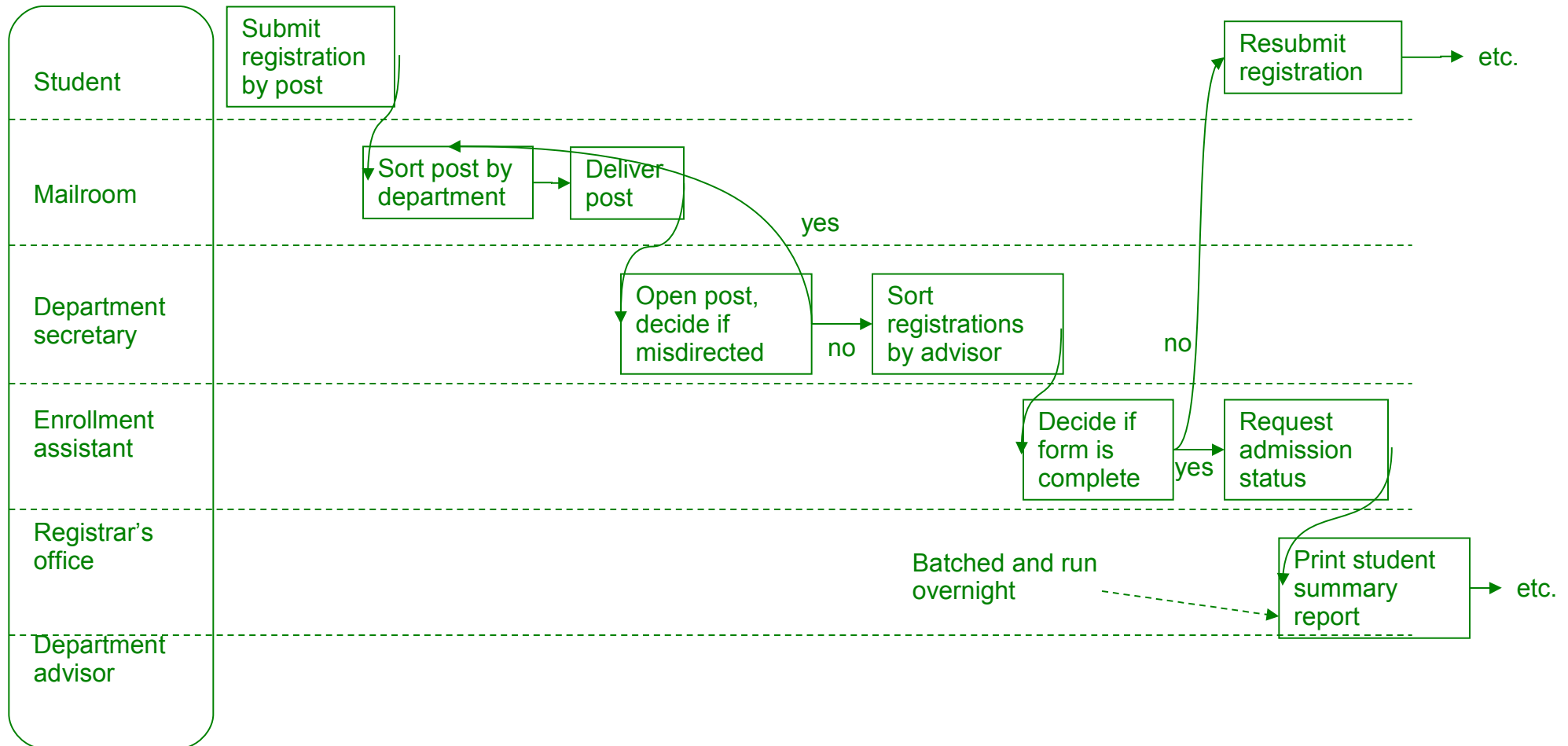
Business process: process workflow models  
("swimlane" diagrams)

Presentation: use case scenarios

Application logic: various

Data management: various

# Process Workflow Model



# Workflow-driven Methodology

Frame the process

Understand as-is process

Design to-be process

Develop use cases

Design user interface

Describe application processes (transactions) and business rules

Develop logical data model

Build overall process map

# Framing the Process

- Identify a set of related processes, and develop an overall process map.
- Establish the scope of the target process.
- Review or document mission, strategy, goals.
- Initial process assessment.
- Process vision and performance objectives
- Glossary of terms and definitions.
- Observations on culture, core competences, management systems.



## A business process is ...

A collection of inter-related work tasks,  
initiated in response to an event, that achieves  
a specific result for the customer of the  
process.

achieves a specific result

for the customer of the process

initiated in response to a specific event

work tasks

a collection of inter-related

# A business process: Some Examples

Suggested Process?	Actually Called	If not a Business Process, why not?
Customer Relationship Mgmt	<i>Process Area</i>	Doesn't deliver a single, specific result.
Acquire new Customer	<i>Business Process</i>	Delivers a single, specific result and meets all other criteria. End-to-end BP.
Setup new Customer	<i>Subprocess</i>	Too small – delivers specific results but they are intermediate results in an end-to-end BP.
Calculate Credit Limit	<i>Activity/ step/ task...</i>	Much, much too small – a single step or instruction. Possibly one line in a procedure or step in a use case.
"Oracle CRM Process"	<i>System</i>	Doesn't deliver a single, specific result; a system that supports multiple Business Processes.
"Our e-business process"	<i>Technology</i>	Doesn't deliver a single, specific result; technology employed by multiple BP's.

# Framing the Process

(document the scope of the process)

Process name in verb-noun format

Event that triggers the business process

Result achieved by the process

Customer that receives the result

Other stakeholders and the result(s) they expect

5 – 7 major activities or milestones

Actors with a rôle in the process

Mechanisms

Timing and frequency

Related processes

**Framing (the 'What?')**

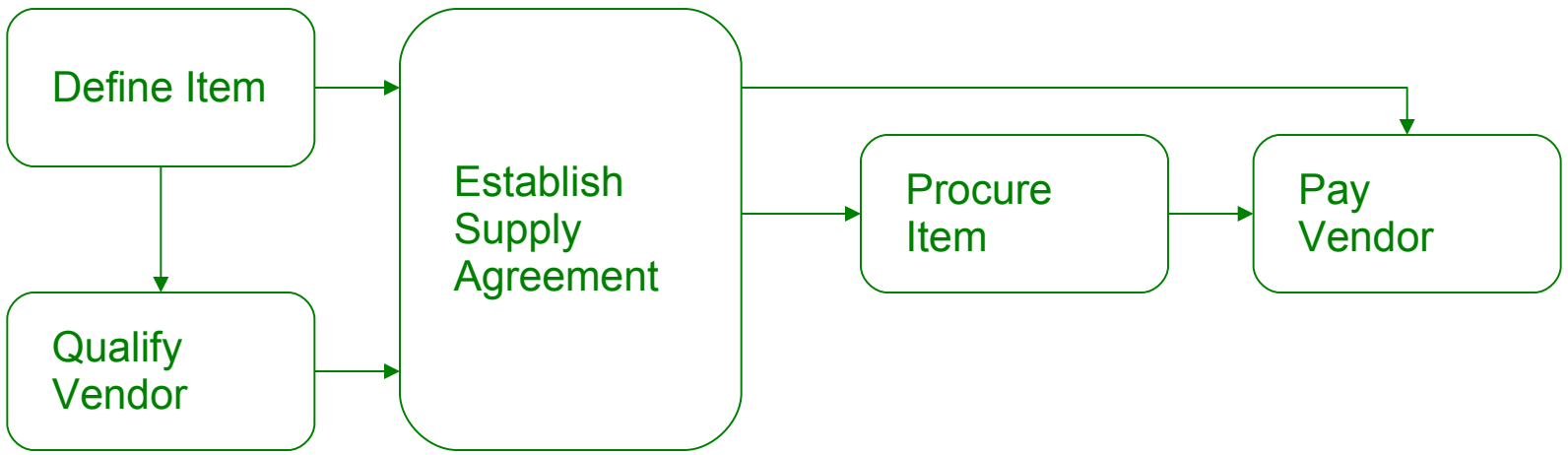
Understand As-Is

Design To-Be

Develop Use-Cases

# Overall process map

Simply a set of related processes:



Overall process map for Supply Management area.

# Identifying processes (bottom-up)

Identify 'milestones' (results from processes)

Link the milestones

Identify cardinality (1:1), (1:m), (m:1)

Set of (1:1)s identifies a process!

Name the process

Identify the triggering event

Identify stakeholders and expected results

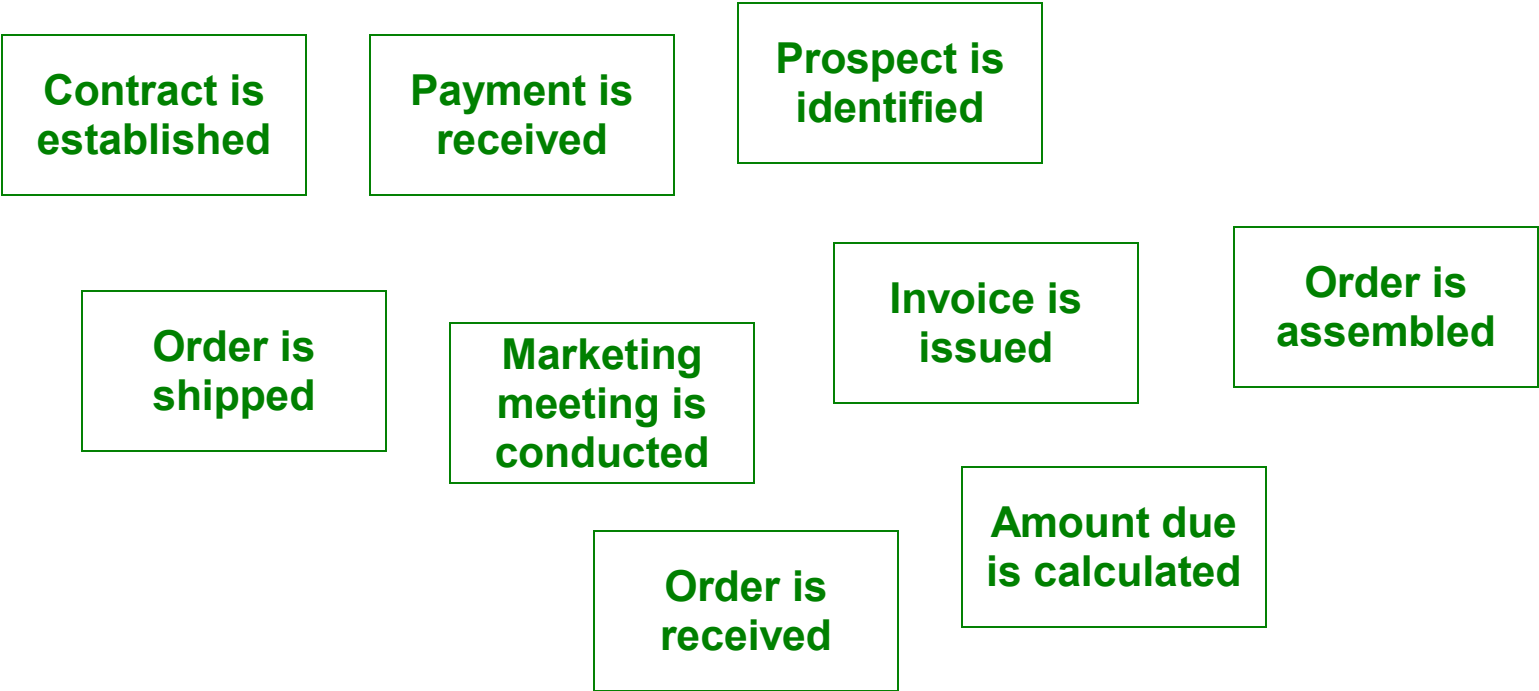
**Framing (the 'What?')**

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# "Milestones"



WF-Driven Methodology:

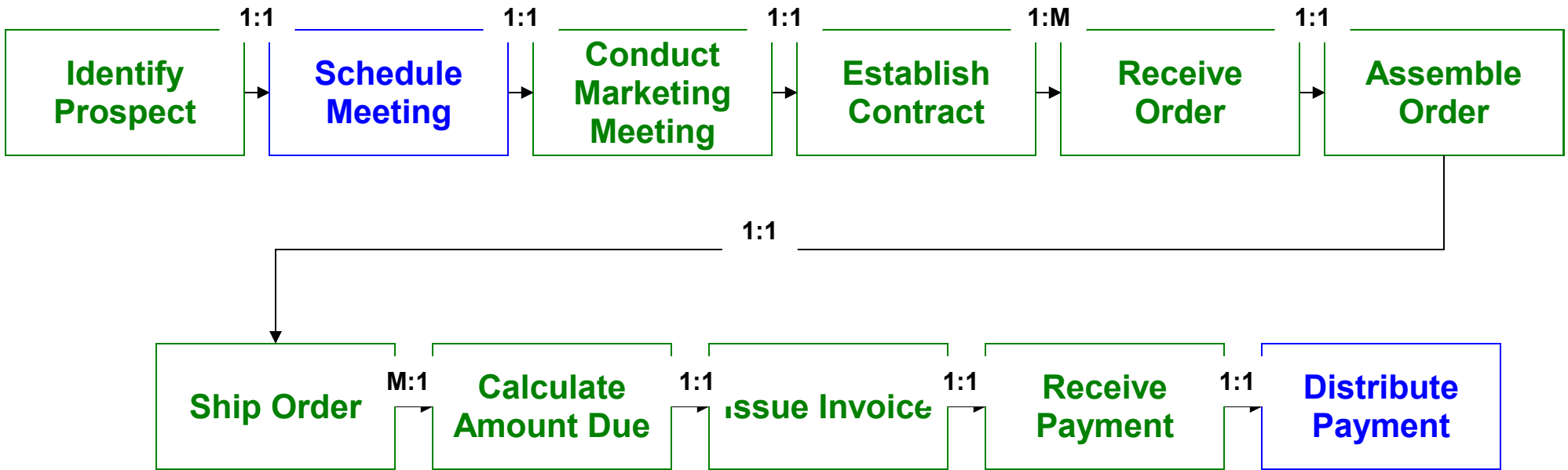
**Framing (the 'What?')**

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# Analyse Links



(Add extra steps if necessary)

WF-Driven Methodology:

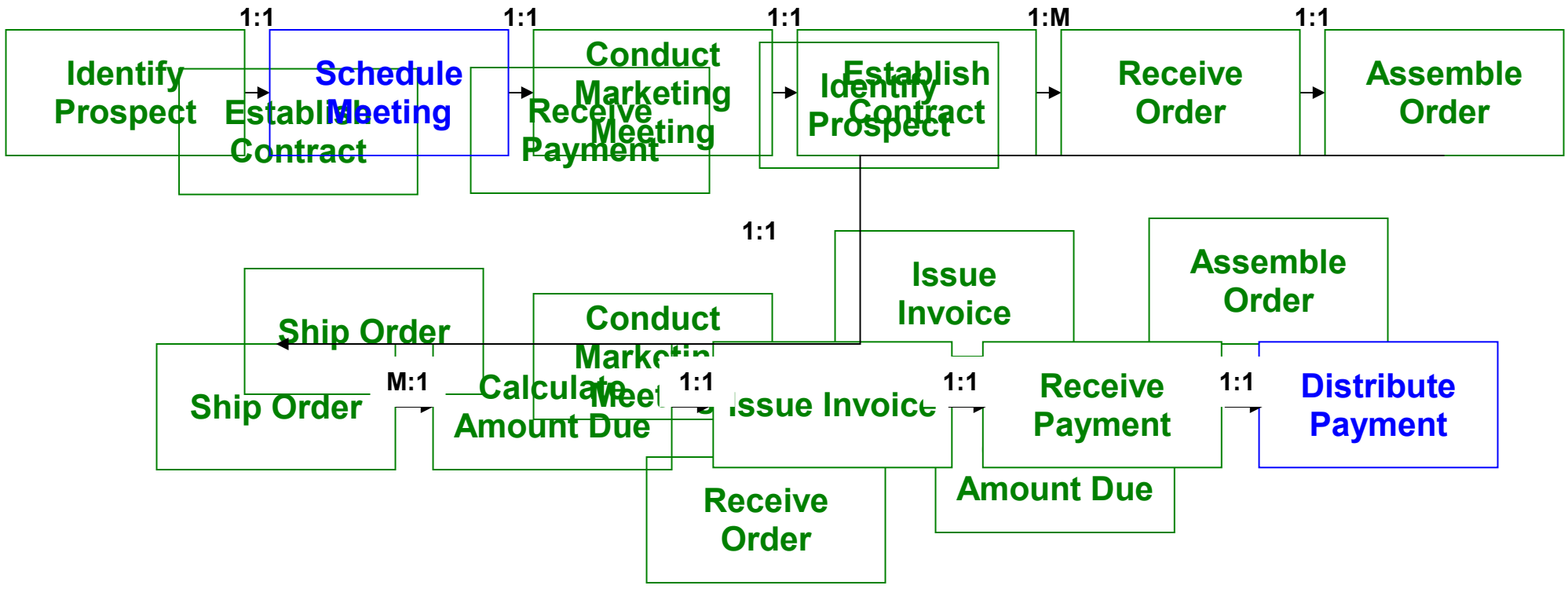
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# Analyse Links



(Add extra steps if necessary)



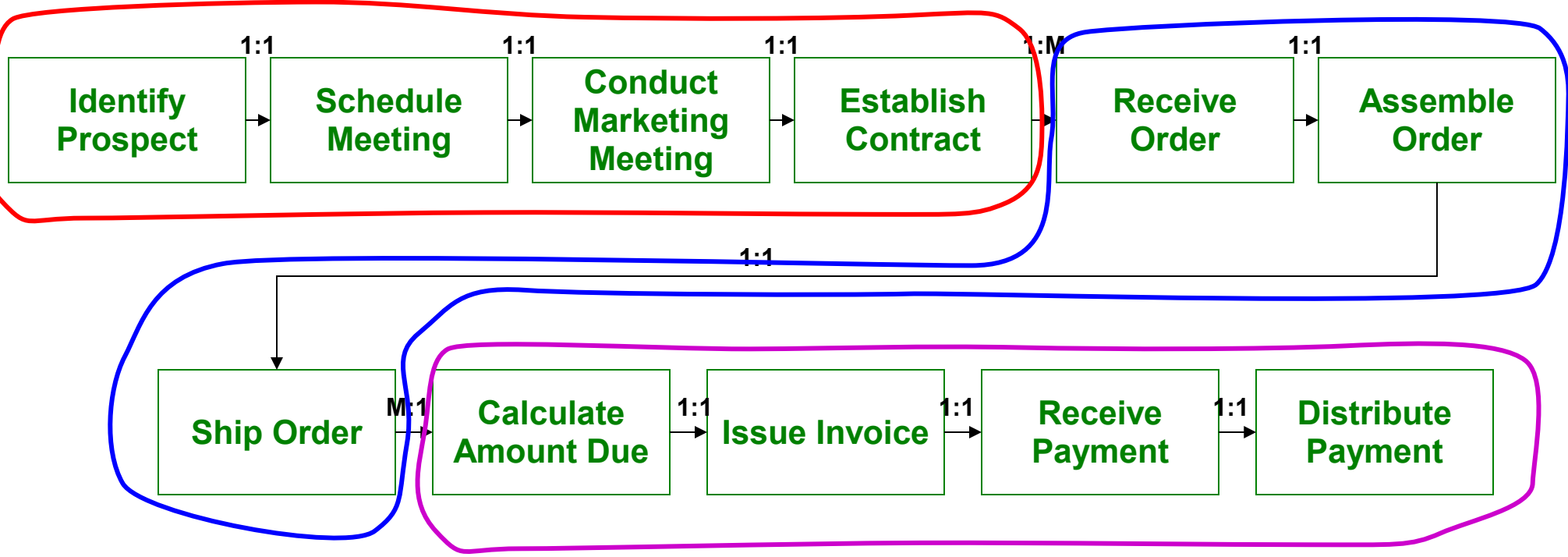
**Framing (the 'What?')**

Understand As-Is

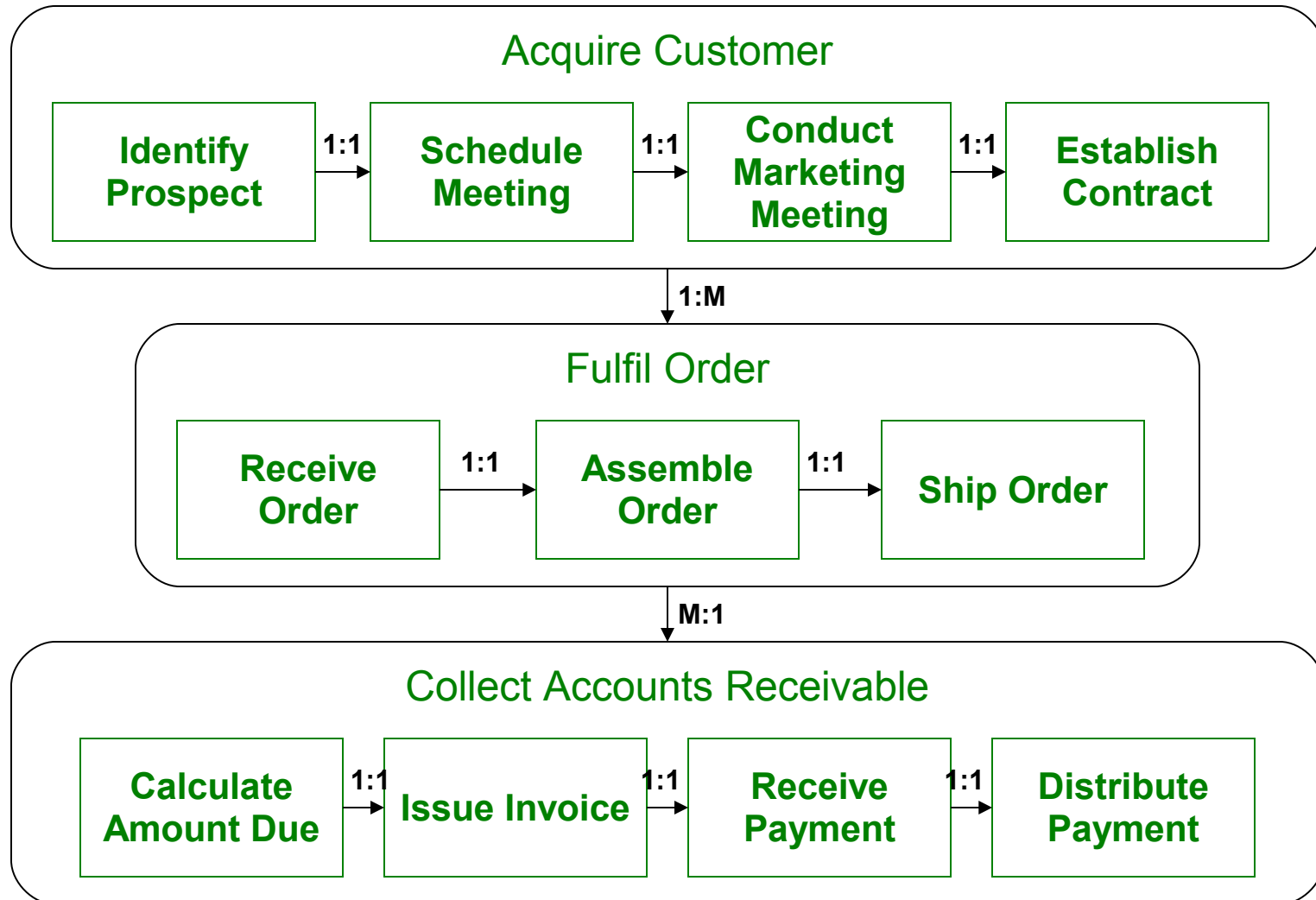
Design To-Be

Develop Use-Cases

# Form Processes



# Name Processes



## Identify stakeholders and expected results

Customer may not be the only stakeholder

Results must satisfy customer, but also the organisation

e.g. Customer order is satisfied (customer receives) and paid for (other criteria met)

# Initial Assessment

## 2 Questions:

- What's wrong with the process anyway?
- What will be better when we're done?

## Perspectives:

- Stakeholders
- Enablers
- Metrics

# Metrics

- Give a guide of where to focus efforts - no point in optimising a process that occurs infrequently, or uses few resources.
- Allow us to evaluate success.
- Collect all the metrics available:
  - Volumes
  - Frequencies
  - Effort
  - Exceptions
- Need to be appropriate for the process , not the function

## What metrics

How many?

How long?

How much effort?

Who's involved?

Efficiency

Cost

# Assessment by stakeholder

## 3 essential groups:

- Customers
- Performers
- Owners

## May also consider:

- Suppliers
- Government & other regulatory agencies
- General public
- Industry bodies

**Framing (the 'Why?')**

Understand As-Is

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**Customer**

Performers

Managers & Owners

Suppliers

Other Groups

## Assessment 1 - Customer

- Has the product or service got the right characteristics?
- How much effort is required of the customer?
- Does the process require too many interactions?
- Is the customer the only one monitoring the process?
- Are the rules & requirements reasonable?



WF-Driven Methodology:    Assessments by SH:

**Framing (the 'Why?')**

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Customer

**Performers**

Managers & Owners

Suppliers

Other Groups

## Assessment 2 - Performers

- “Is this how you’d do it if you had a choice?”
- “Does this process help you meet your goals?”
  
- Remember that the performers are not the customers!

WF-Driven Methodology:    Assessments by SH:

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Performers

**Managers & Owners**

Suppliers

Other Groups

## Assessment 3 - Managers & Owners

- Process must be efficient and profitable.
- In a not-for-profit setting, it must be fiscally responsible.
- Consider opportunity cost as well as actual cost.

WF-Driven Methodology:    Assessments by SH:

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Customer

Performers

Managers & Owners

**Suppliers**

Other Groups

## Assessment 4 - Suppliers

“How easy is it to do business with us as compared to other customers?”

“What errors or actions on our part cause difficulties for you?”

WF-Driven Methodology:

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Assessments by SH:

Customer

Performers

Managers & Owners

Suppliers

**Other Groups**

## Assessment 5 - Other groups

General public – ethics, safety, environment.

Local community – involvement in local initiatives.

Regulators.

Don't assume - *ask!*

# Process Enablers (review)

## Workflow design

- Workplan for responding to an event

## Information technology

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## Motivation and measurement

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## Human resources

- Knowledge, skills and experience
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## Policies and rules

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- May be obsolete

## Facilities design

- Workplace design and infrastructure

## Enabler perspective

### Workflow design:

- Examine
  - + steps
  - + precedence
  - + flow
  - + handoffs
  - + decision points
- What is the one thing you would do to improve this process?
- What aspect of this process causes you the most problems?

# Information Technology

- Primarily manifested as systems. In many cases the system *is* the business process.
  - What's old and doesn't work?
  - What's new and might work? ... or has become a necessity?
- Not only need to do things right – need to do the right thing. Many application development projects automate the root cause of the problem.
- Work from the bottom up in the framework:
  - + Are the right data being maintained, and is the right information being presented to each step?
  - + Are the right activities being automated?
  - + Are the user interfaces appropriate for the task and the person using them?
  - + Is the flow of work automated wherever possible and appropriate?

WF-Driven Methodology:

Framing (the 'Why?')

**Understand As-Is**

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**Enabler Perspective:**

Workflow design

Information technology

**Motivation & measurement**

Human resources

Policies and rules

Facilities design

## Motivation and Measurement

- People don't pay much attention to what management says; they pay attention to what management measures.
- Do the measures of performers support or impede process goals?
- NHS example – waiting lists!



WF-Driven Methodology:

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**Enabler Perspective:**

**Workflow design**

Information technology

Motivation & measurement

**Human resources**

Policies and rules

Facilities design

## Human Resources

- How do organisational structures, job definition and skills impact the process?
- Will the workforce need to change?
- Will new staff skills and training be required?
- Keep the unions involved.

## Policies and Rules

Rules reflect the organisation's bias. e.g. two possible policies on refunds could be:

- "refunds up to a certain amount can be handled by a sales person on the retail floor, at their discretion, whether or not the customer has a receipt."
- "all refund requests must be accompanied by a sales receipt and a completed refund reason form; they will be processed by the Customer Service and Accounts departments, and a cheque will be posted."

The process will be different in each case.

## Facilities Design

- Workflow design/physical infrastructure getting more attention
- Design of eg Offices detrimental to work being done
  - Cubicle seems private but can be overheard/disturbs others
  - For highly collaborative Workgroups with meetings etc need a meeting room and usually not enough available.
- Space, quiet, privacy & ability to avoid interruptions are key productivity enablers that are frequently ignored in modern office layouts (open-plan)

Approve customer credit application						
Event	Subprocesses					Result
Credit application is submitted	Complete application	Evaluate application	Decide on application	Inform customer	Set up customer	Customer is notified, recorded and enabled to place orders
Case for action				Vision		
<ul style="list-style-type: none"> <li>We're losing market share to competitors offering fast or instant credit, and our image is declining.</li> <li>Our paper-based workflow involves many starts and stops, and involves several departments and job functions.</li> <li>We don't capture the right information on the application, so we need to go back to the Customer repeatedly.</li> <li>We can't answer Customer queries about in-process applications.</li> <li>The effort and delay aren't justified for small Customers who pose minimal risk as a group.</li> <li>Credit Representatives spend most of their time on small accounts, not on large ones where their expertise is needed.</li> <li>Unless we fix the process, our market share will continue to erode and closure of the operation is likely</li> </ul>				<ul style="list-style-type: none"> <li>We will offer instant, secured credit to small Customers.</li> <li>Applications from large Customers will be handled in two days or less.</li> <li>All staff will perform higher-value work, and have more authority – Credit Reps will focus on large clients, and Credit Admin Clerks will handle small applications completely.</li> <li>Independent surveys show that Customers perceive us as the Customer Service leader in our industry.</li> <li>Once the new process is implemented, our market share decline will slow, and within one year we will again be growing at 12% per year.</li> </ul>		
Actors	Mechanisms		Metrics			
<ul style="list-style-type: none"> <li>Applicant</li> <li>Sales Representative</li> <li>Credit Representative</li> <li>Credit Administration Clerk</li> <li>Credit Bureau</li> <li>Word Processing Clerk</li> <li>Marketing Administration Clerk</li> <li>Customer Data Maintenance Clerk</li> </ul>	<ul style="list-style-type: none"> <li>Credit Application</li> <li>Credit Report</li> <li>Notification Letter</li> <li>Sales System</li> </ul>		<ul style="list-style-type: none"> <li>1 to 4 hours and up to 7 elapsed days per application</li> <li>6 Credit Representatives</li> <li>150 applications per month, growing 10% per year</li> <li>75% approved, 25% declined</li> <li>85% of applications come from small customers</li> <li>90% of sales volume comes from 10% of customers</li> <li>10% of applications come from previously denied Applicants, and 10% from former Customers</li> <li>Small Customer bad debt write-offs are less than .2% of sales, and overall they are approximately 1% of sales</li> </ul>			

**A “poster” summarising the results of framing the process**

## The Environment

Any redesigned process must fit into the environment and 'culture' of the organisation.

Issues:

- Mission and strategy, especially strategic differentiation.
- Organisational culture.
- Core competences.
- Business context and focus.

# Business mission, strategy and goals

## Mission:

- what we do, and who we do it for.

## Strategy:

- Why would a customer choose us?

## Goals:

- performance targets, to focus effort and gauge progress.

## Strategic discipline

Study by Treacy & Wiersema (in *The Discipline of Market Leaders*) shows that leading companies choose to excel in one of three disciplines:

- Operational excellence
- Product leadership
- Customer intimacy

“Also rans” make no choice or choose to be good at all three

**Framing**

**Understand As-Is**

**Design To-Be**

Develop Use-Cases

**Mission and strategy.**

Organisational culture.

Core competences.

Business context & focus.

# Strategic disciplines

	The Three Disciplines		
	Operational Excellence	Product Leadership	Customer Intimacy
Core business processes that...	Sharpen distribution systems and provide no-hassle service	Nurture ideas, translate them into products, and market them successfully	Provide solutions and help customers run their business
Structure that...	Has strong central authority and a finite level of empowerment	Acts in an ad-hoc, loosely-knit and ever-changing way	Pushes empowerment close to the point of customer contact
Management systems that...	Maintain standard operation procedures	Reward individuals' innovative capacity and new product successes	Measure the cost of providing service and of maintaining customer loyalty
Culture that...	Acts predictably and believes "one size fits all"	Experiments and thinks "out of the box"	Is flexible and thinks "have it your way"

Adapted from Fortune, Feb. 6 1995, p. 96.



## Some process improvement goals...

- Flexible in meeting the needs of individual customers
- Easier for an entry-level workforce to adopt with relatively little training and support
- Fewer customer interactions
- Absolute auditability and adherence to applicable regulations
- Accessible anytime, anywhere, via any medium
- Easier to standardise and maintain at international locations
- Less time and effort to integrate new suppliers or customers into the process
- More suitable for support by commercial off-the-shelf (COTS) software

## Beliefs and Culture

- Organisational behaviour stems from a few basic beliefs:
  - "There's always a better way"
  - "We have a bias towards informed action"
  - "Decision-making should be close to the action"
  - "Our clients are trying to cheat us, the public misunderstands us and the media are out to get us. (and our employees couldn't care less)"

# Identifying Culture

1. Are there stories or corporate legends that provide examples?
2. What factors continually get in the way?
3. What factors are seen as expediting progress?
4. How are decisions made?
5. Are all employees free to offer opinions or challenge decisions?
6. Is the orientation towards the individual or the group?
7. Whose opinion is valued?
8. Are there any identifiable behaviours that are rewarded or punished?
9. Is there a high tolerance for ambiguity?
10. Does the organisation favour results or following procedure?
11. Is the organisation cautious or will it take risks?
12. Is the emphasis on relationships and social interactions, or on tasks and getting on with the job?

# Core Competences

- What are we really good at?
- World-class organisations have up to five or six core competences that their core products or services are based on.
  - “Core competence is the collective learning of the organisation, especially the capacity to coordinate diverse production skills and integrate streams of technologies. It is also a commitment to working across organisational boundaries.”
  - “organising around strategic business units is problematic because they under-invest in core competences, imprison resources and bind innovation” (Prahalad & Hamel)
- We can scale down the idea of a Core Competence to the process level - design processes that play to the strengths of the performers.

## Scoping questions - 1

1. What is the primary business objective driving this project?
2. What is the current situation?
3. Is this essentially a business process improvement project?
4. What is the technical or project objective?
5. Which business data will or will not be involved?
6. Organisationally who will be impacted by this?
7. What areas outside the process will be impacted, or will require interfaces?

## Scoping questions - 2

8. Are there other initiatives we should be aware of?

9. What could go wrong?

10. What could go right?

11. Have any significant issues or difficulties arisen?

12. Are there any constraints we need to take into account?

13. Have any important decisions already been made?

14. Have project structure and personnel been identified?

15. Are you really the sponsor?

# References

Sharp, A. & McDermott, P. (2001), *Workflow Modelling*, Artech House, Boston & London.

Sharp, A. & McDermott, P. (2008), *Workflow Modelling*, Artech House, Boston & London, Second Edition.

Prahalad, C. K. & Hamel, G. "The Core Competence of the Corporation" *Harvard Business Review*, May-June 1990, pp. 79-91.

Treacy, M. & Wiersema, F. (1995), *The Discipline of Market Leaders*, Addison-Wesley, Reading, MA.