

# Extras for "Concept Modelling for Business Analysts" & "The Data-Process Connection"

- *Essentials of Business Processes*
- *Essentials of Use Cases & Services*

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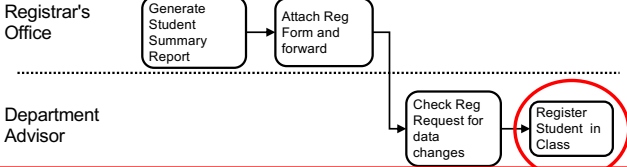
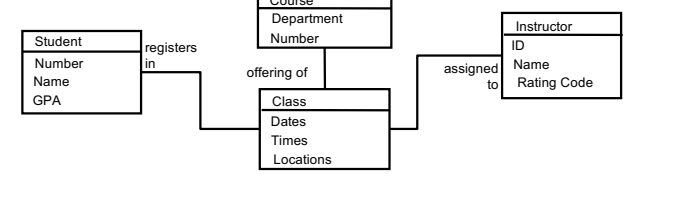


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# *Essentials of Business Processes*

# Business Process – a vital perspective for Business Analysis

Framework Layer	Technique sample	What it covers
<div>Goals</div> <div>Business Objectives</div>	<p>The university is initiating the “Strategic Enrollment” program to raise Student graduation rates in part by ensuring Classes are available for Student registration when needed.</p>	<p>✓ <b>Project Charter</b> – documents the rationale, objectives, scope, and success measures for the project</p>
<div>Process</div> <div>Business Process</div>		<p>✓ <b>Process Model</b> - shows “what” in a Scope Model, then “who &amp; how” in a Workflow Model – the steps done by the actors in the process</p> <p><b>Business Process:</b> a great <u>framework</u> for <i>Business Analysis</i></p>
<div>Application</div>	<p>When advisor enters five characters of Last Name → Then System lists matching Students</p> <p>When advisor selects list item → Then System displays expanded Student view with needed Classes</p> <p>When advisor etc. →</p>	<p>✓ <b>Use Case</b> – models how an actor interacts with a system to obtain (trigger) a service, typically to complete a step in a process</p> <p><b>Use Cases and Services:</b> where we capture <i>Functional Requirements</i></p>
	<p><b>Business Services (rules &amp; logic)</b></p> <p>Input Message: Student Number, Course ID, Class ID → <b>Register Student in Class</b> (Verify Student Status, Verify Student pre-reqs, Confirm Class availability, Create Registration) → Output Message: Results</p>	<p>✓ <b>Service Specification</b> - describes a service – a package of rules and logic – that is triggered complete or respond to a business event</p>
<div>Data</div> <div>Data Mgmt. Services (databases)</div>		<p>✓ <b>Business Object Model</b> - depicts the things and the facts about things the organisation needs to record; the things (Business Objects) are what processes and solutions act on.</p> <p><b>Business Object Model:</b> a great <u>platform</u> for <i>Business Analysis</i></p>

## *Business Process themes and overview...*

Three main themes:

1. *Simple* techniques, *rigorously* applied, help us achieve *more* in *less time*.
2. *Communication with* and *engagement* by the people who *do the work* through the use of simple, consistent techniques.
3. *Not* just a technocratic undertaking – we take a *holistic* view that includes *human, social, and organisational* factors.

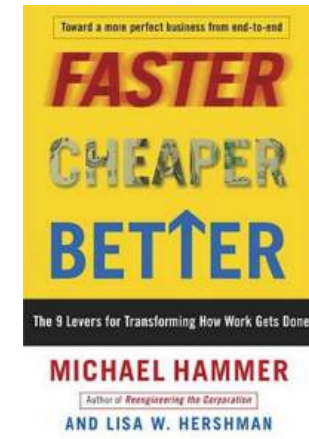
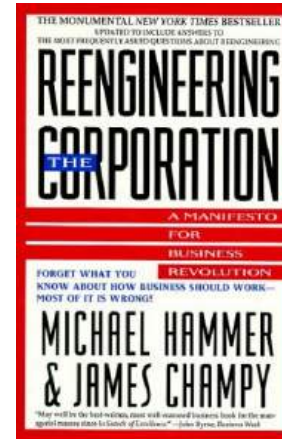
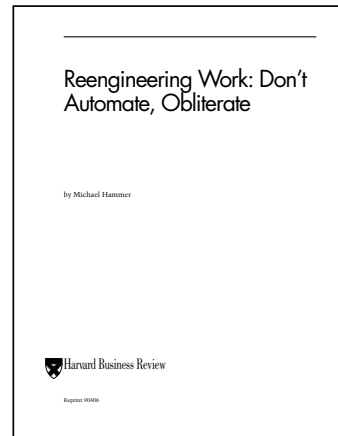
***First,  
the fundamentals***

- Some things you need to know about *business processes*
- A three-phase methodology for *Business Process Change*

# 1. Confusion – what *is* a “business process?”

1. It is essential to have clarity on what a *business process* really is
2. Performance measures may be *functionally aligned* - work *against* business processes
3. Success with business processes requires a *holistic view* in which *six enablers* are considered
4. A business process can't be great at everything – a single *differentiator* must be chosen

In the early 1990s, Michael Hammer popularised the focus on *business process*



Introduced core terminology:

- end-to-end, cross-functional, functional silo, ...
- even *business process*

Still, people and organisations miss the point...

# Lesson #1 – Never assume everyone agrees what a "process" is

We need some help with our *Product Lifecycle Management process*.

**Not** a single process –  
it's a *family* of multiple  
business processes  
(a *process area* or  
*process domain*)



I spend all day writing business processes, like the process to *Revise Product Brochure Image*.

**Not** an entire process –  
it's a *procedure* providing  
instructions for a single task  
(SWI – standard work  
instructions)

A whole *spectrum* of interpretations of *process*.

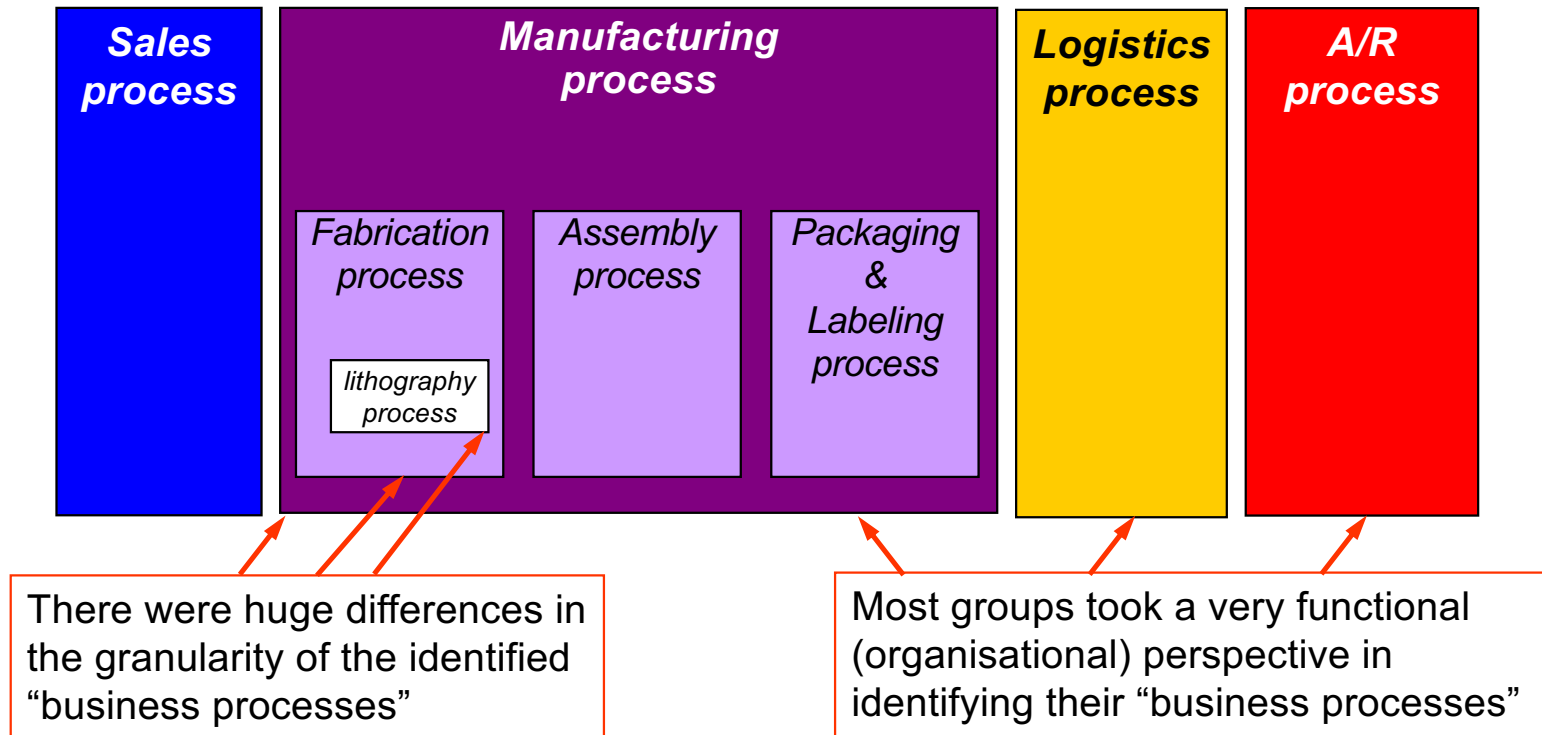
Seek balance –  
a “business process”  
lies between the extremes

Most people hear *process*  
and think *procedure*!

*The key issues – granularity and orientation*

## *A real life (and expensive!) example*

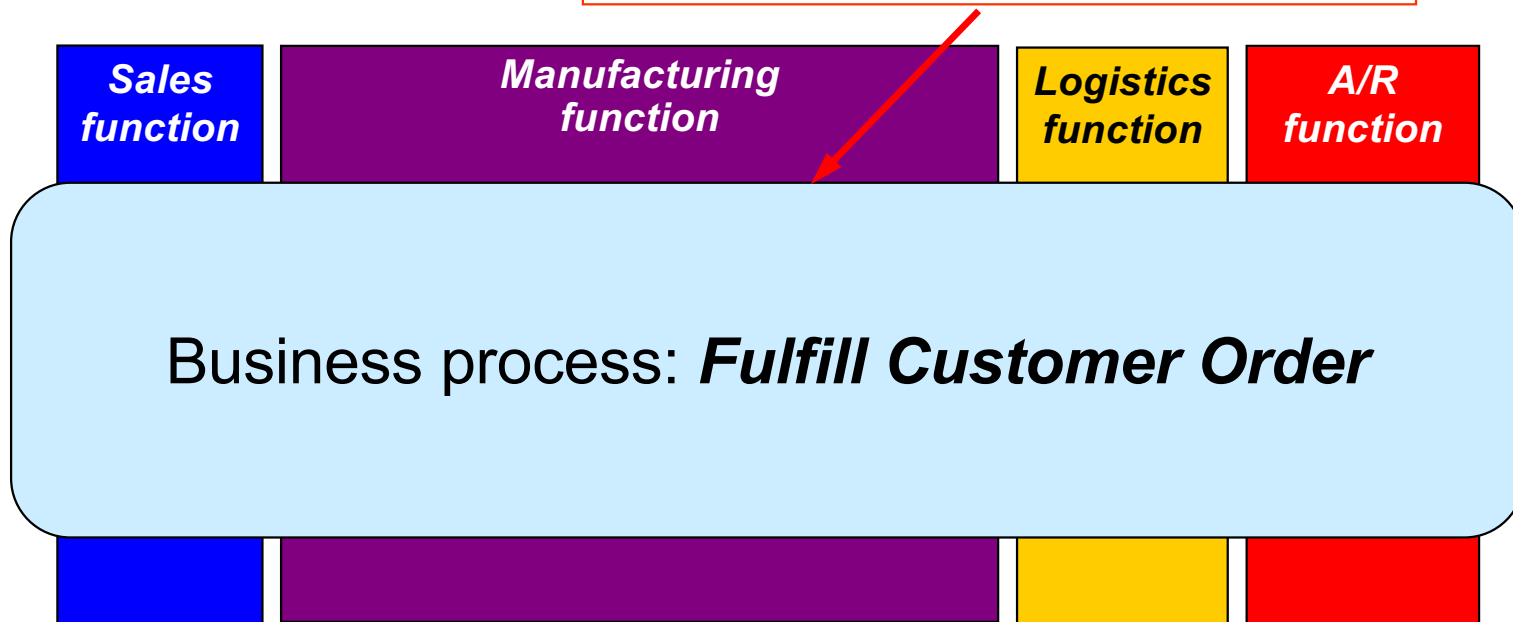
As part of a massive system implementation, a global manufacturer identified the *business processes* that were expected to improve:



The problem? *These aren't processes – they're functions!*

## The “real” business processes were missed

Everyone confused “process” and “function.”  
None of the actual end-to-end processes  
were correctly identified.

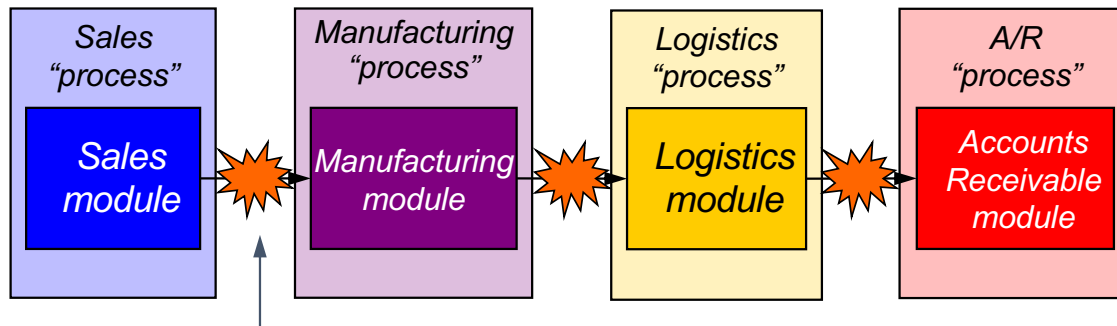


**“Business Process” =**  
*end-to-end, cross-functional, business process.*  
**“Larger”** than people think – from *initial* trigger to *final* results



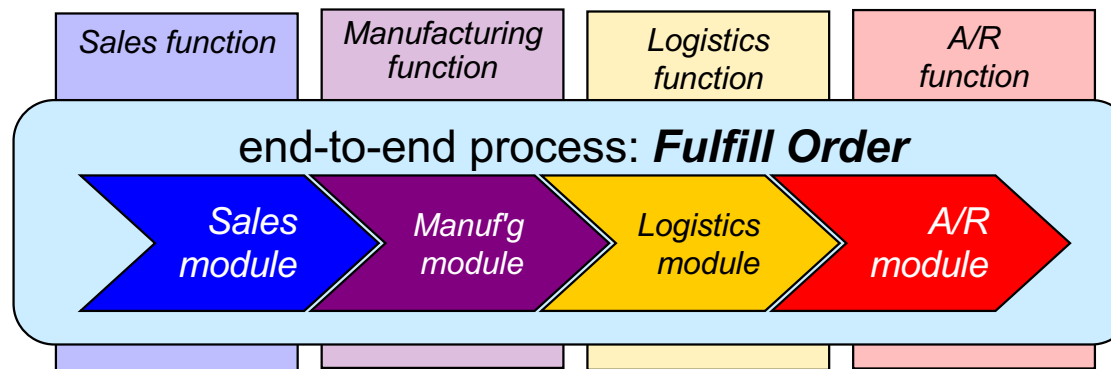
## Impact of confusing function and process

*Implementing SAP without clarity on “process”:*



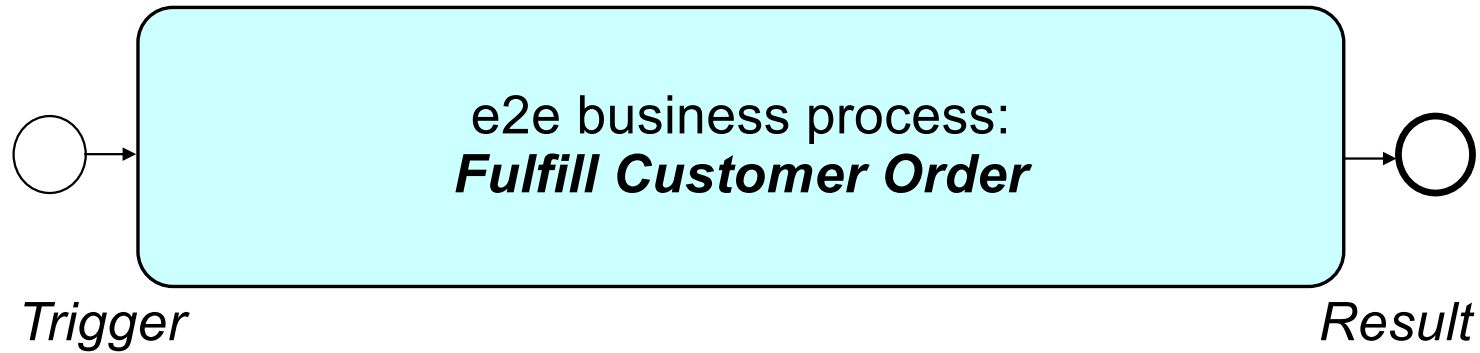
*Conflicts: timing, coding, terminology, data formats, performance targets, ...*

*SAP re-implemented in a process-driven configuration:*

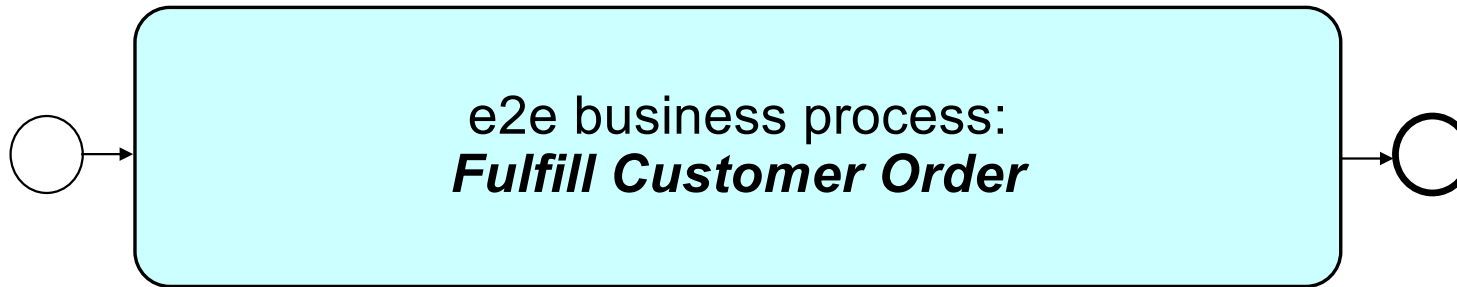


**Same software,  
radically different  
outcomes**

## *Discuss - what are the boundaries of the process?*



## What are the boundaries of the process?



### *Trigger*

Order received? *No.*

Before that...

- Contract is Finalised
- Price & Schedule are Negotiated
- Specifications are Confirmed

And before that...

- Demand is Signalled. *Yes.*

### *Result*

Order is Shipped? *No.*

Order is Received? *No.*

Order is Received, Tested,  
and Accepted? *Yes.*

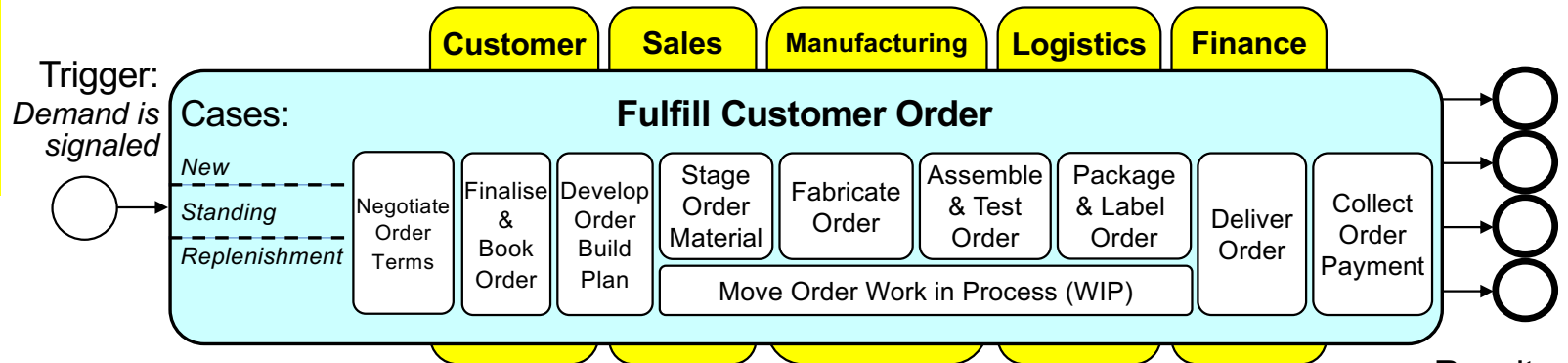
Any other results?

*Yes, for other stakeholders.*

*Always trace to the earliest trigger,  
and to the final results for each stakeholder.*

# Process Scope Model – “what” first, “who and how” later

I build a  
Process Scope Model & a  
Process Summary Chart on  
~100% of Project Recovery  
assignments -



“TRAC” –

1 – **Triggering event or events**

2 – **Results: final outputs**

- result(s) received by the process' primary customer
- result(s) for other stakeholders (performers, owner, supplier, regulator, ...)

3 – **Activities: 7 +/- 2 phases, milestones, or sub-processes**

- a phase achieves a significant intermediate result
- simply ask the participants for ~5 to 7 milestones within the process

4 – **Cases**

- main variations, e.g. “new order” vs. “standing order”
- verb – *qualifier* – noun

5 – **Functions or Organisation Units**

6 – **Actors and responsibilities**

7 – **Systems, data sources, other mechanisms**

↑ **essence of the process (“what”)**

↓ **as-is elements of the process, for clarification (“who and how”) (6 and 7 not shown)**

Results:

**Customer:**

Goods received, tested, & accepted

**Owner:**

Payment received

**Performer:**

Commission credited

**Industry Association:**

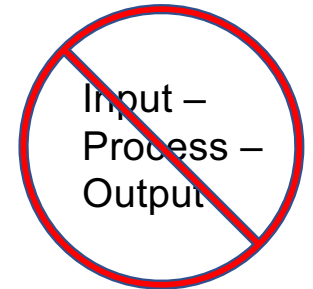
Order stats reported

Always construct a  
Process Scope Model & a  
Process Summary Chart before  
diving into Workflow Modelling /  
Swimlane Diagramming

# The essential framework

## Business Process:

- a sequence (or set) of **activities** (steps and decisions,)
- initiated in response to a **triggering event**,
- that achieves a defined **result** for each process stakeholder



Triggering Event



End...

**A business process –**  
a sequence (or set) of activities  
(steps and decisions)

Final Results



...to end.

- Three types of events:
  - Decision-based (action)
  - Time-based (temporal)
  - Data-based (conditional)
- The *earliest* triggering event

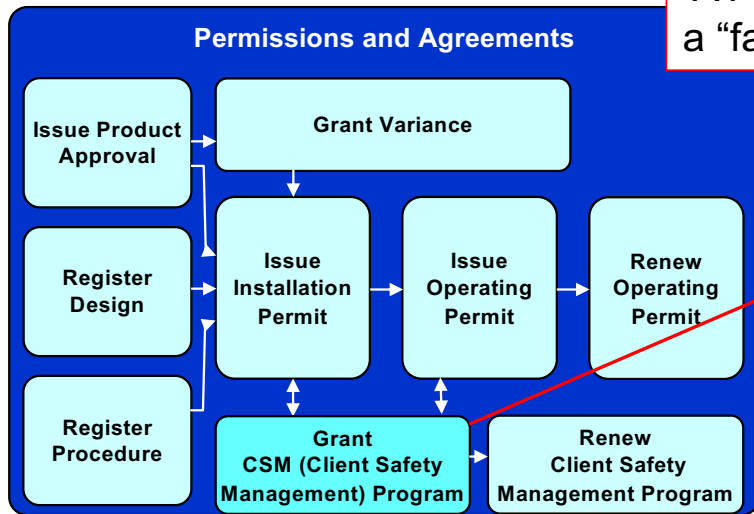
- Important processes are virtually always cross-functional and involve multiple actors / roles
- May be a defined *sequence*, or a more ad hoc *set* of activities
- First, identify “*what*” it includes – Trigger, Results, Activities, Cases (“TRAC”)
- Later, we add “*who and how*,” then map the process flow, if there is one

- Three types of results:
  - A service
  - A good
  - Information
- The *final* result

“What” before diving into the “who and how”

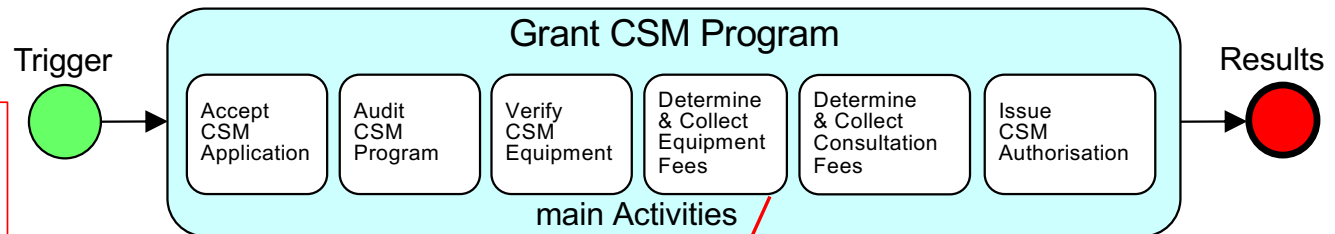
# Taxonomy: a collection of processes vs. a process vs. a procedure

A Process Area or Process Domain –  
a “family” of related Business Processes:



An end-to-end process – “Grant CSM Program,”  
from *application* to *authorisation*,  
involving many departments, external organisations,  
participants, and procedures.

Business Process Scope Model (TRAC) – pure “what”...



**Business Process:**  
A sequence or set of *activities*  
that delivers significant *results*  
for the process’ customer  
and other *stakeholders*

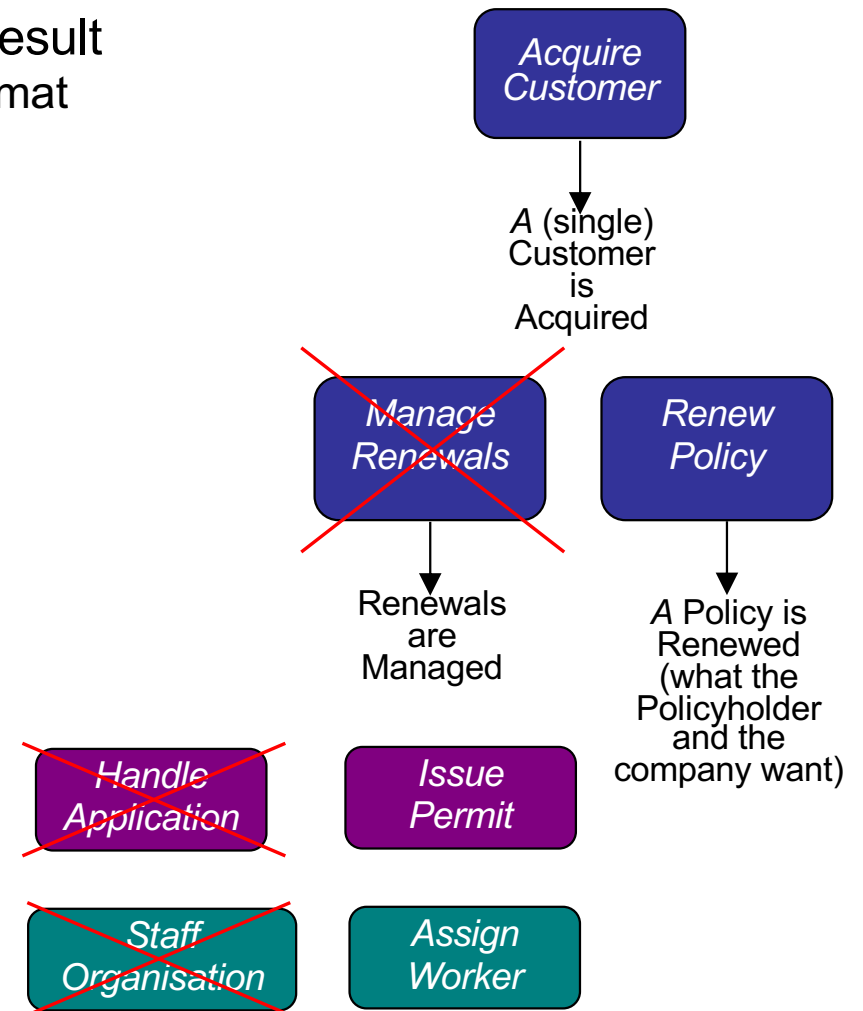
**Procedure:**  
A set of step-by-step work instructions  
(a job aid) for a specific task or activity  
that will yield identical results every time

**Procedure – Calculate Unit Registration Fees:**  
For each Unit:

- Determine Unit Type and Unit Risk Factor;
- Apply Registration Fee from Reg. Fee Table;
- Identify additional Inspection fees from...

# Naming conventions will make life easier

1. The process name **must** indicate the expected result
  - Name potential process in “active verb – noun” format
  - Restate that name as a result (“noun is verbed”)
  - Ensure this is the intended result of the process:  
*discrete*, so results are *identifiable & countable*
  - **No mushy verbs:** manage, monitor, administer, handle, track, support, maintain, etc.
  - **Active verbs only:** *Evaluate Prospect*, *Acquire Customer*, *Fill Customer Order*, *Resolve Customer Issue*, ...
  - Applies to business processes, phases (subprocesses,) activities, steps, ...
2. Name process from customer's perspective (what do they want from the process?)
3. Name process in the singular



# Our three-phase methodology – proven, practical, & agile

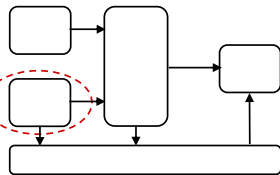
1

## Establish Process Scope and Objectives

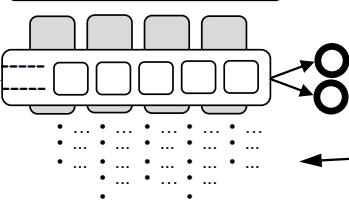
**Identify** & scope the process with a Scope Model & a Process Summary Chart; Optional - build a Concept Model

Complete **initial** as-is process assessment, and to-be objective setting, by **stakeholder**

Some goal or issue, not rigorously specified



- Customer
- Performers
- Owner
- others...



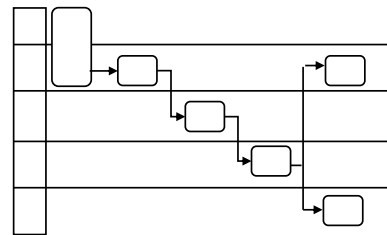
- ID processes & draw *Process Landscape* (Optional – only if you have a large scope)
- ID **Trigger**, **Results**, main **Activities**, **Cases (TRAC)** & draw *Process Scope Model* – focus on *what*, no reference to *who* or *how*
- ID involved functions & mechanisms (*who* and *how*) & draw *Process Summary Chart*
- Conduct *stakeholder-based assessment*

2

## Understand the As-Is Process

Perform more **detailed** as-is modelling: an Augmented Scope Model & optionally, Workflow Models

Complete **final** as-is process assessment by **enabler**, and generate to-be improvement ideas



- Process
- IT
- M&M
- HR
- P&R
- Fac. or...

- Develop *as-is* models:
- *Augmented Scope Model* – add ~5 – 7 more detailed Activities for each main Activity
- (Optional) *as-is Workflow Models* – only enough detail to understand process behaviour
- Conduct *enabler-based assessment* and identify *potential improvements*

3

## Design the To-Be Process

Refine to-be improvement ideas and determine 5-10 **key features** of the to-be process

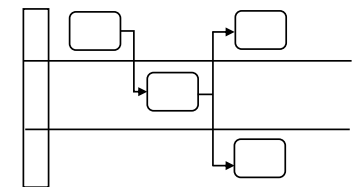
Assess each to-be feature **by enabler** to ensure the new process is implementable and sustainable

Design the to-be process:  
1 - **essential** activities first  
2 - "who & how" next  
3 – transport & protocol last



Re-think!

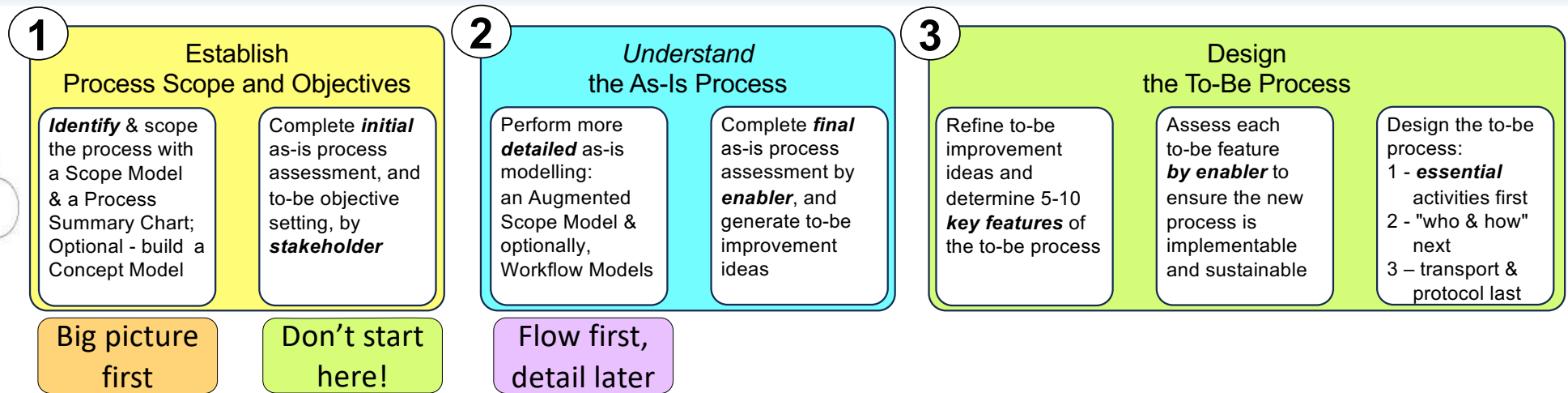
- Select key to-be *Features*



- Assess each key *Feature* by enabler
- Identify and sequence *essential* activities
- Develop *Workflow Models* for essential activities by adding *who* and *how*
- ...on to requirements definition and implementation



# Our methodology – three responses to three common difficulties



My *hardest* assignments

1 – Premature diagnosis of the situation

*Don't* start with a problem statement!  
There will be some goal or issue, but don't formalise it **yet**.  
And remember... it may not be a "process" issue.

2 – Failure to identify true end-to-end processes

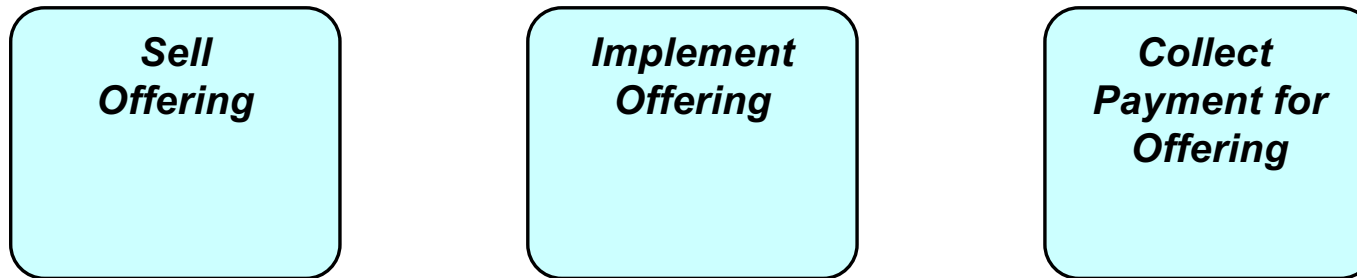
Rigorous techniques to identify real business processes – a Process Scope Model and a Process Summary Chart make scope and context visible.

3 – A rapid descent into unhelpful detail

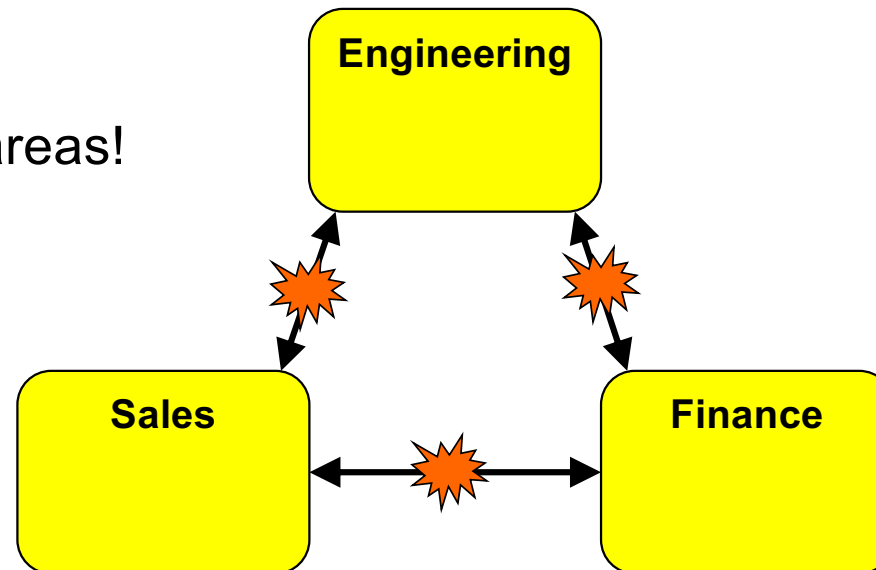
Clarify the big picture, then take a *controlled* descent with well-defined levels of detail.

## *Another Business Process example, if we have time*

A regional telecommunications provider (the "Telco") thought they had three main Business Processes, and efforts to improve them were failing:

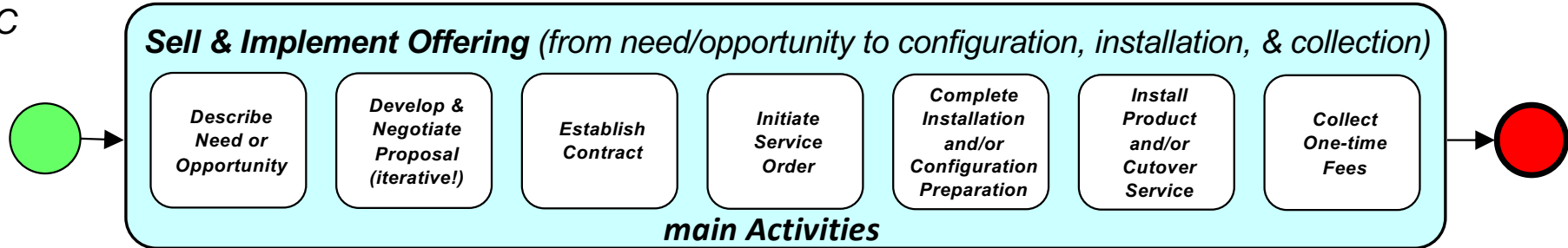


The outcome...  
conflict between functional areas!



# Process Scope Model showed ONE process not THREE

TRAC



## Triggering Event:

- Prospect / Customer expresses need
- Telco (Inside Sales, Marketing, Sales Rep, ...) recognizes opportunity

## Cases:

- BU with or without Telco Internet, no cabling (*our focus*)
- initial installation
- service only
- product only
- mixed

## Other factors:

- TBD

## Results:

### Customer:

Product / Service is *installed and operational* per original or amended contract terms

### Telco:

- Ongoing source of *revenue* in place
- One-time *fees* collected

### Employee:

- *Commission* or *referral credit*

### Agent:

- *Commission*

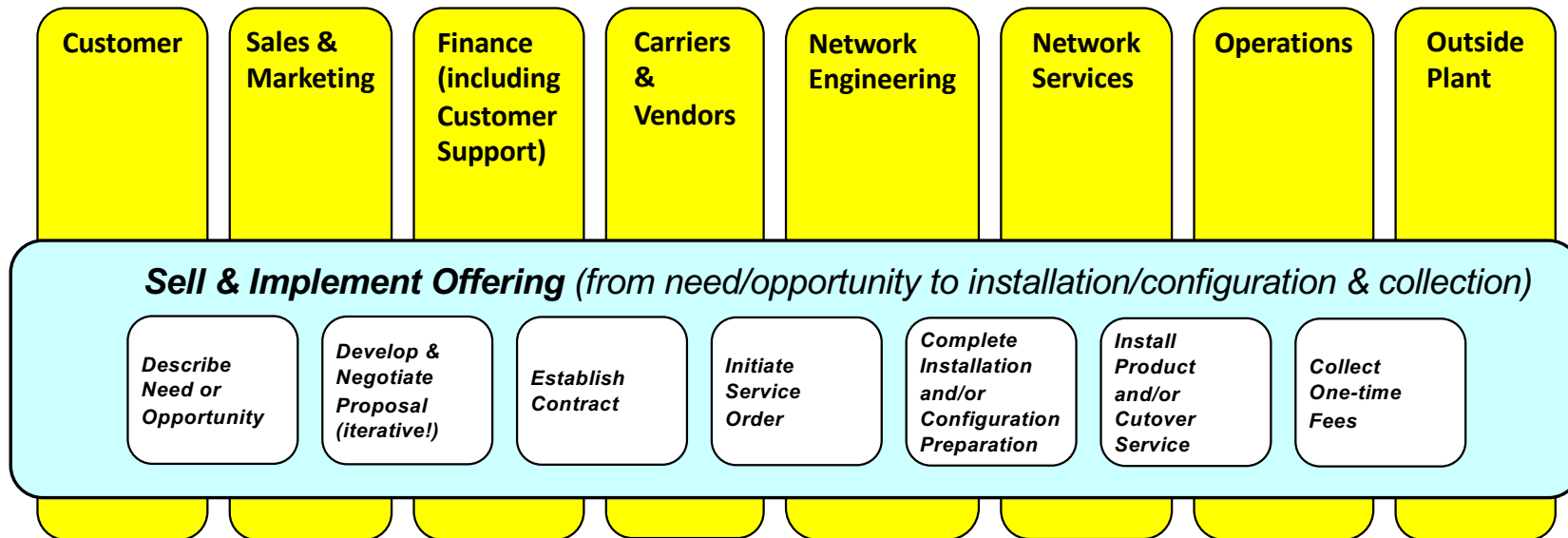
The "token," a Service Order, is changing state from *need/opportunity* to *configured, installed, & collected*.

The Business Process could be named "Fulfill Service Order" but the client wanted to name it "Sell & Implement Offering."



- President reports *culture change*. "We're all in this together!"
- An end-to-end, cross-functional Business Process is a great lens to view *organisation conflict and disfunction!*

## Process Summary Chart – my favourite diagram!



Process Summary Chart (a.k.a. "Process vs. Function Chart") adds "who" at the organisational unit or functional level.

*Nothing else clarifies "Process" vs. "Function/Organisation" as well.*

Great for putting details of Activities or Functions in context, e.g. ...

## Multiple roles by organisation for “Sell & Implement Offering”

Customer	Sales & Marketing	Finance (including Customer Support)	Carriers & Vendors	Network Engineering	Network Services	Operations	Outside Plant
<p>Roles:</p> <ul style="list-style-type: none"> <li>• Office manager or Owner (Smaller)</li> <li>• IT (Larger)</li> <li>• C-level (CIO, COO, CFO...)</li> <li>• Third party IT vendor or agent</li> <li>• Customer Project Coord.</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• Senior. Account Execs</li> <li>• Strategic Rel'nship Managers</li> <li>• Account Rep 1</li> <li>• Inside Sales Rep</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• Sales Admin</li> <li>• Order Writer</li> <li>• Billing Rep.</li> <li>• Customer Support Rep.</li> <li>• Director of Customer Support</li> <li>• Receiving and Posting Payments (what role does this?)</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• Port Out Specialist (for CS Record) CSR/LSR</li> <li>• IT Person</li> <li>• Local government</li> <li>• “Call before you dig”</li> <li>• Customer Project Co-ord (int/ext consultants or phone vendors)</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• System Admins (assign IP)</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• BU Tech (survey)</li> <li>• Switching Specialist (NS Spec)</li> <li>• Network Services Coord / Provisioner</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• Sales Engineer</li> <li>• CLEC Technician</li> <li>• Material Manager</li> <li>• Materials Specialist</li> <li>• Project Manager</li> <li>• Customer Training &amp; Support</li> <li>• Install Supervisor</li> </ul>	<p>Roles:</p> <ul style="list-style-type: none"> <li>• Drop Crew</li> <li>• Lineman (not usually)</li> <li>• Engineering Supervisor</li> <li>• Outside Records Specialist</li> </ul>

It was a shock to senior leadership to see how many roles were involved, often overlapping or unnecessarily

# Another fast Augmented Scope Model example

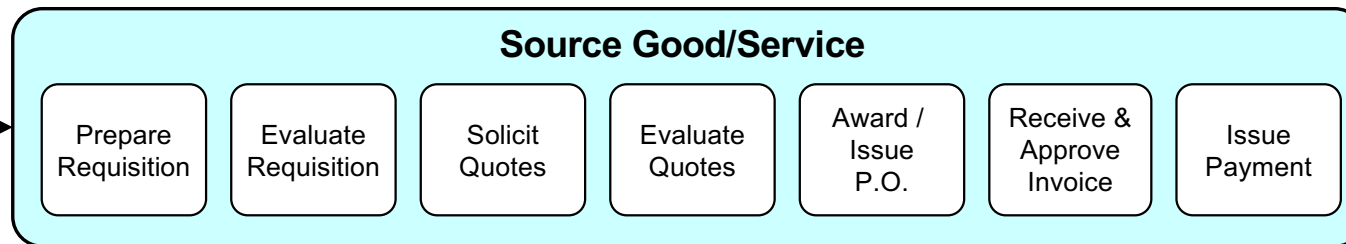
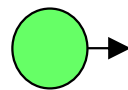
## Cases:

- \$5000 - \$25000 Goods
  - \$25000 - \$50000 Goods
  - \$5000 - \$25000 Services
  - \$25000 - \$50000 Services
- Assume everything <\$5000 is purchased with a PCard

This example adds detail by major Activity  
(or subprocess/phase/milestone)

## Triggering Event:

- Customer needs Good / Service



Develop scope of work / specs

Investigate potential vendors (and price?)

Solicit vendor quotes (just to get an idea)

Obtain approval (Department)

Verify Item and Account (General Accounting)

Submit requisition (visible to all)

Confirm completeness – get clarification this is actionable (scope sufficient)

Assign (or re-assign Buyer as necessary)

Identify MBE/SB opportunity (competitive) (co-op)  
\* sole source or co-op, vendor(s) known

Determine methodology  
• sole source  
• co-operative (piggyback on contract)  
• competitive  
• emergency

Determine (additional) potential vendors

Solicit quote (including Bid Due Date)

Post quote (solicitation documents) in "the binder"

Resolve vendor queries

\* Up to \$200K, we control who gets solicitations; above, no control – it's "publicly advertised."

Over \$200K there would be 20 more activities, and could be multiple award.

Receive quote (mail, fax, e-mail, ...)

Confirm completeness

Verify suitable price, terms, and conditions (generally, low bid for equivalent)

Clarify (not negotiate) with vendor

Optional:  
• Evaluate equivalency (for alternate)  
• Confirm equivalency w. Customer

Identify vendor

Generate Purchase Order  
Notify Requestor

"Transmit / deliver" P.O.  
\* Pain point – we aren't sure when the vendor receives the P.O.

Receive Good/Service  
\* Invoice could be attached

Accept Good/Service  
Issue invoice (vendor)

Receive invoice:  
• from vendor  
• from the department the vendor sent it to

\* Vendor complains invoice is "lost"

If >\$5000, match

• invoice

• PO

• receiver

If <\$5000, match

• invoice

• PO

\* Could invoice \$4K on \$40K PO

Issue Payment (Magic Happens Here)

Batch invoices for GAD

Receive payment

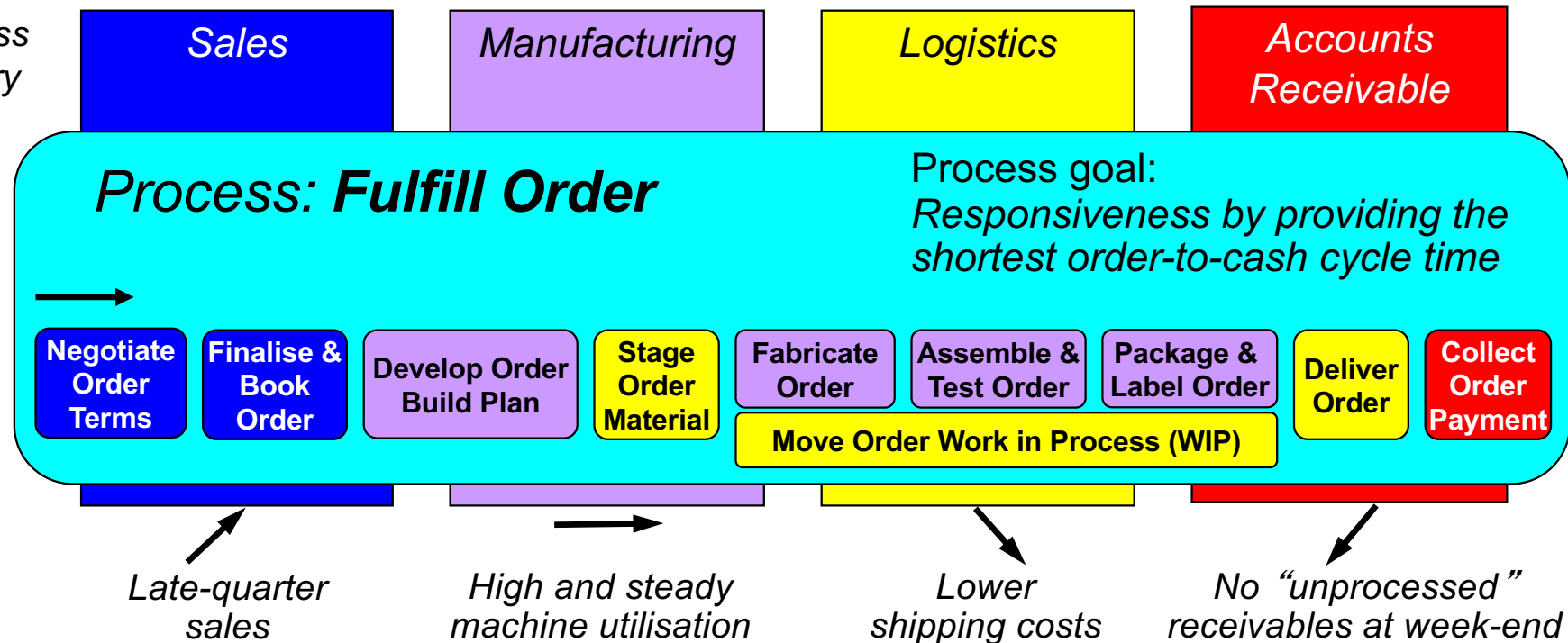
- \* If multiple line items, different line items could go to different vendors;
- \* If multiple vendors, line items are not split.

## Final Results:

- Customer has received Good/Service:
- Vendor has been paid
  - via A/P
  - via PCard

## 2. A common obstacle – misaligned performance measures

A Process  
Summary  
Chart



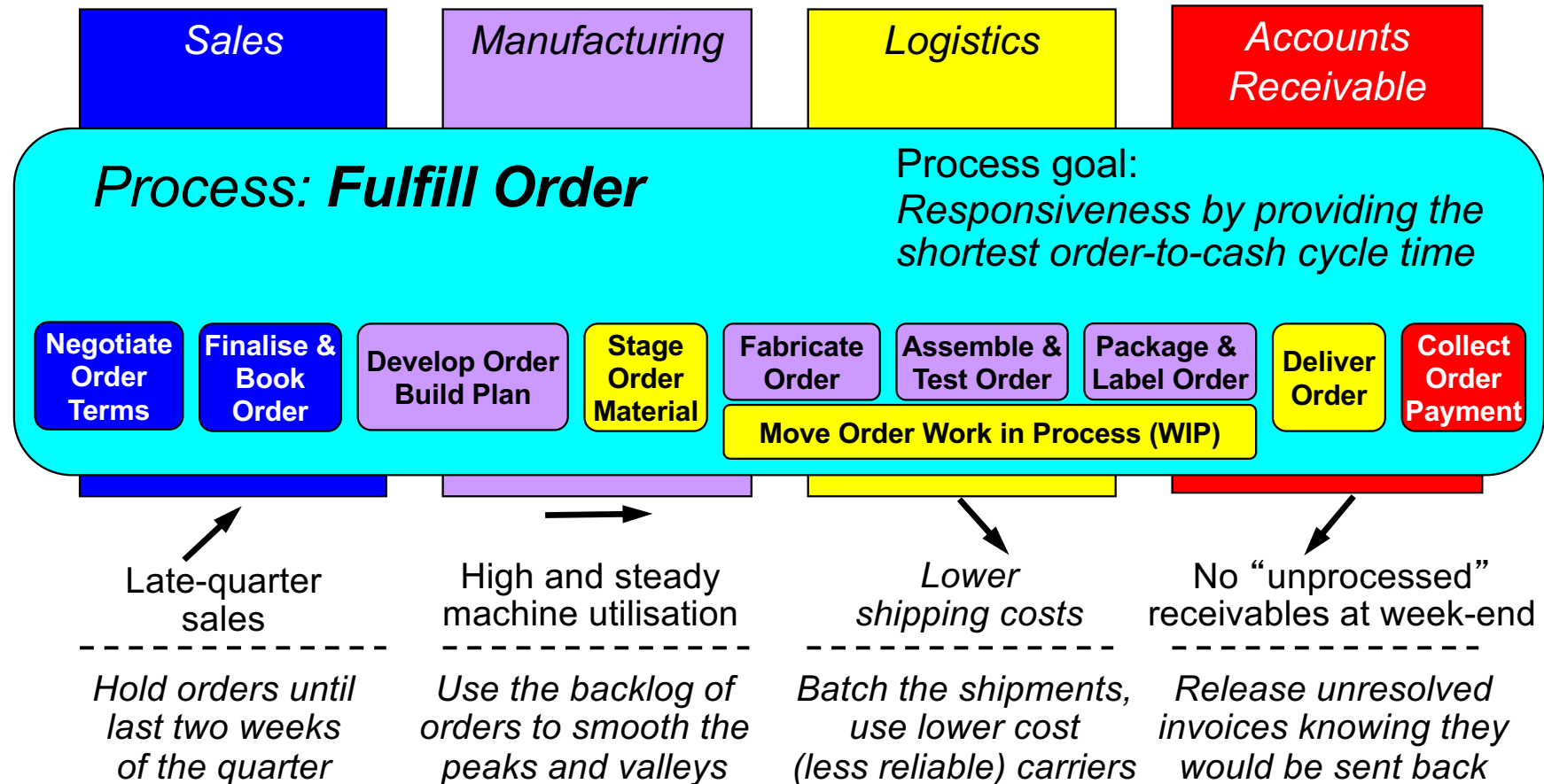
1. It is essential to have clarity on what a *business process* really is
2. Performance measures may be *functionally aligned* and work *against* business processes
3. Success with business processes requires a *holistic view* in which six *enablers* are considered
4. A business process can't be great at everything – a single *differentiator* must be chosen

But... performance measures were established *functionally*, before awareness of the *end-to-end process*

*Think about it –*

*What are the likely impacts of these performance goals?*  
*What will the different functions do to meet the targets?*

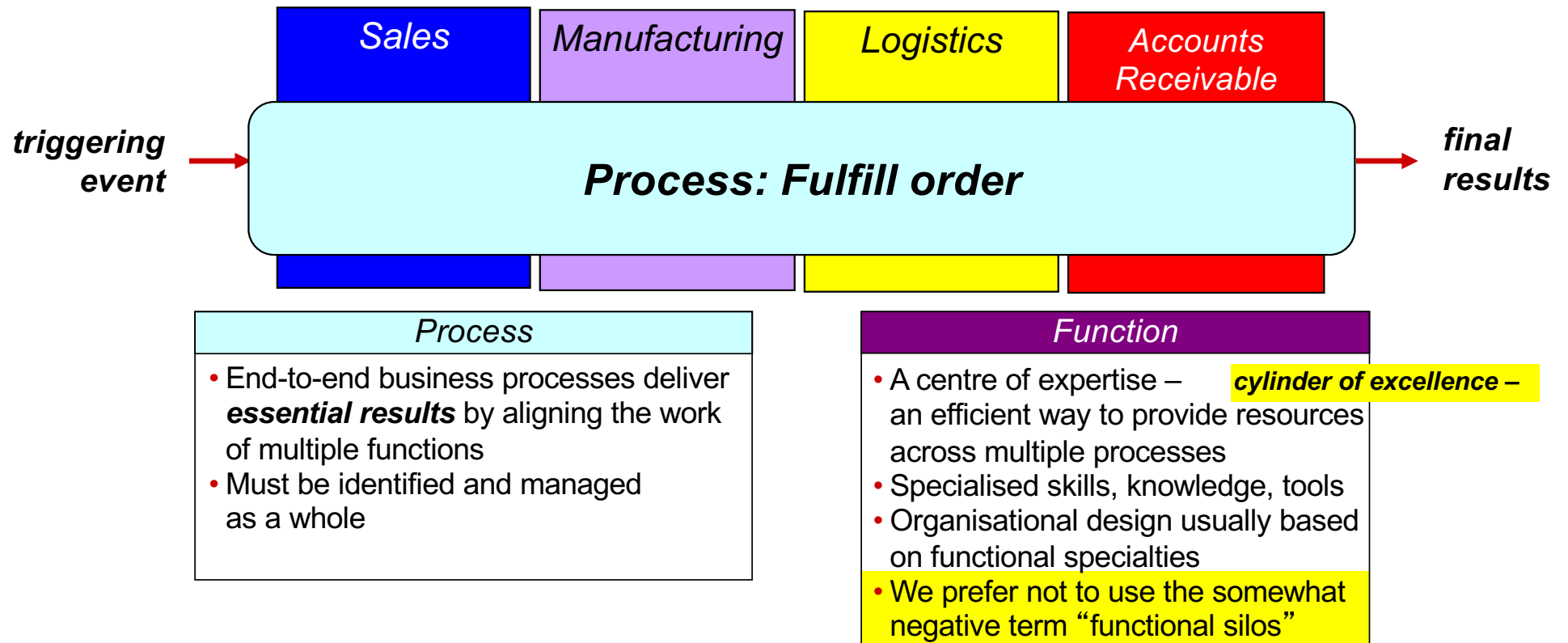
## Misaligned performance measures



Poor performance because each function was working hard to meet uncoordinated, functional targets

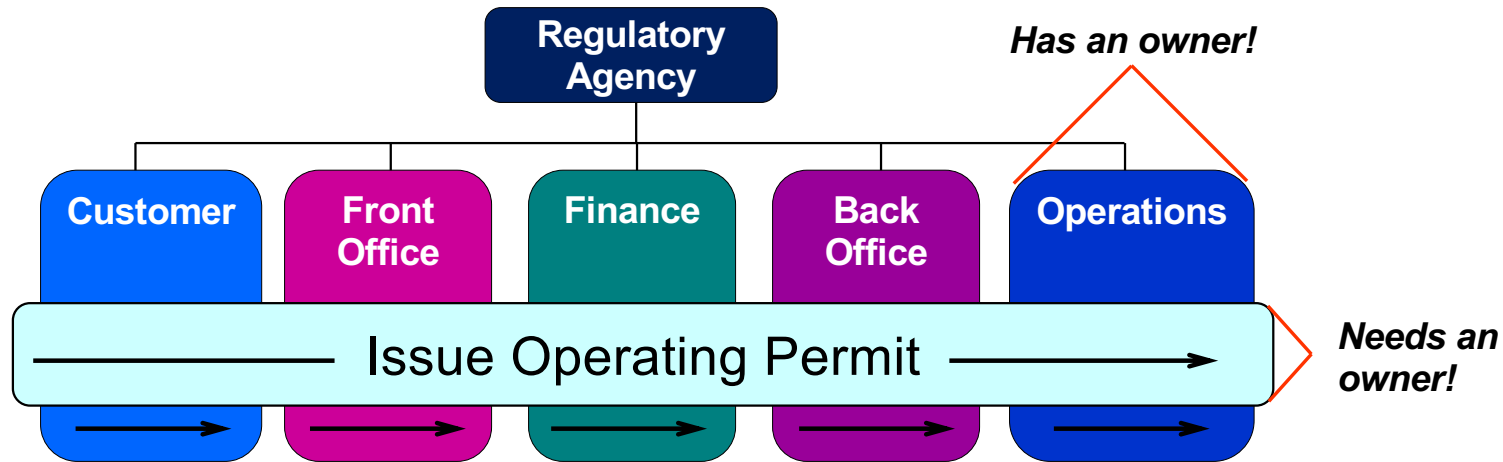


## *This doesn't mean functions are bad!*



*Ultimately, business processes are all about alignment*

## Processes and functions – three key points

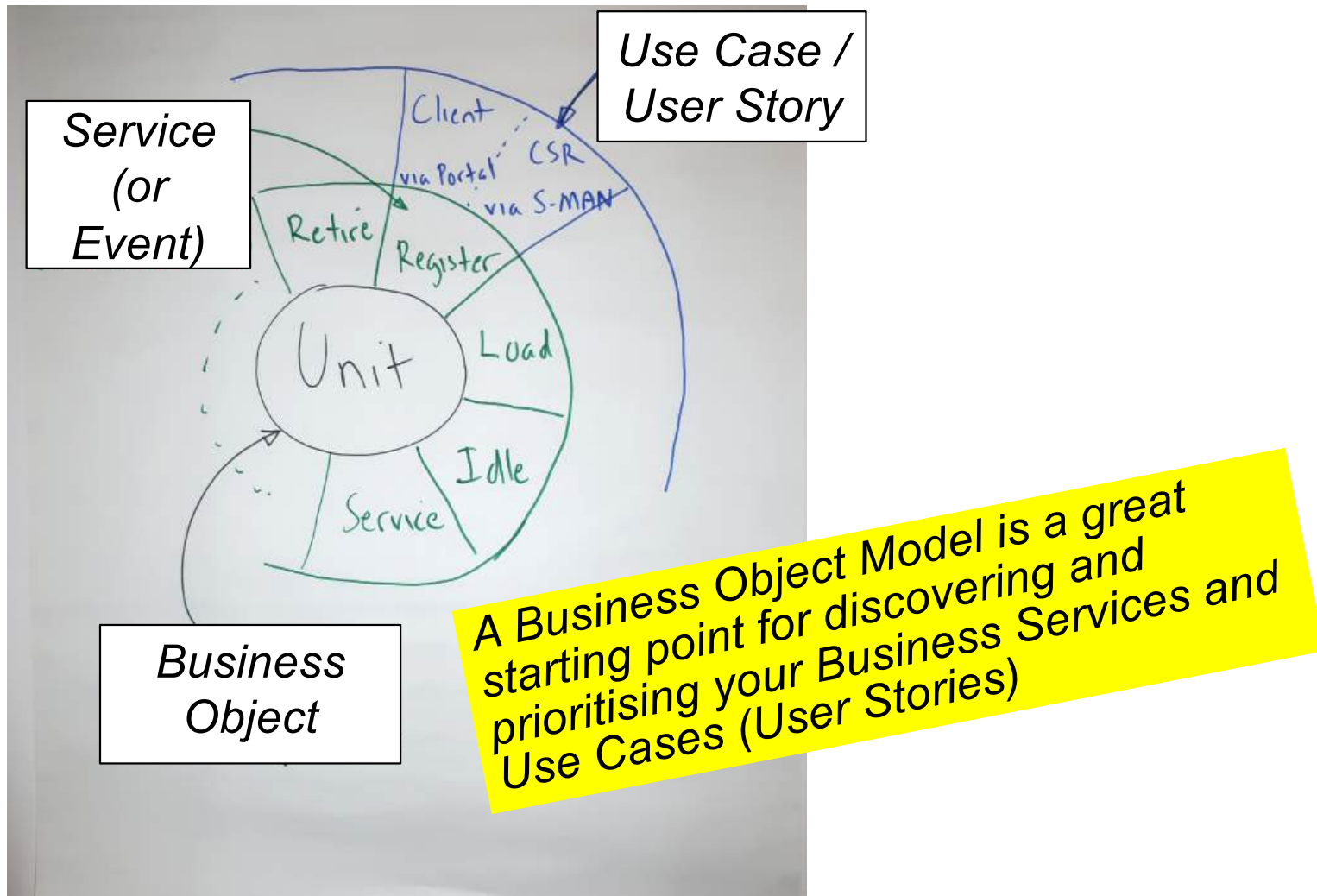


- The first step in managing processes is to *determine what they are* – they don't identify themselves
- Performance goals for the functions must *align with* (or be *balanced against*) the performance goals of the process
- Processes need an *owner / steward* to set direction, ensure alignment, and resolve conflict

*It takes concerted effort – nothing happens by accident*

# *Essentials of Use Cases & Services*

## Review – Business objects, services, and use cases



# Review – Is there an alternative approach?

Simplistic methods at one extreme:  
can do as much harm as good

The goal lies in the  
middle ground:

Overly complex methods at the other extreme:  
difficult for business people to verify

List-form requirements, typically a  
Business Requirements Document,  
(*context-free requirements*)

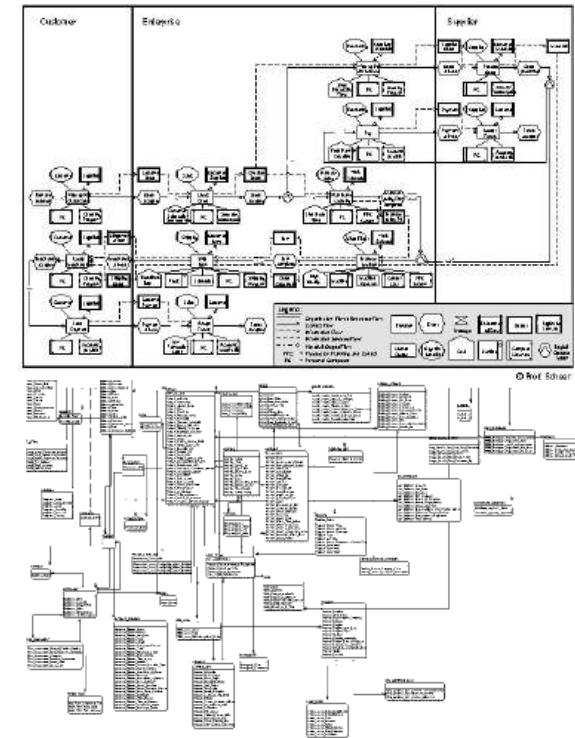
ID#	Business Feature	Requirement Type	Business Unit(s) Affected	Potential Application(s) Impacted						
BRQ025	files that are available for the selected day.		Readiness							
OMSPI-BRQ026	System shall include all outage status in the Transmission Outage report.	Core	Operation Readiness	WebOMS						
OMSPI-BRQ027	<p>System shall display consistency in the format of output data in the Transmission Outage report when using pipe-delimited feature as follows:</p> <p>For the same row of output data, all data elements in the same position in any field must correspond to each other.</p> <p>Example of existing Transmission Outage report where there are two inconsistencies in the output data format:</p> <ol style="list-style-type: none"><li>Report shows one Outage ID, three Substations, and four Equipment Names.</li><li>First listed Substation does not correspond to the first listed Equipment Name.</li></ol> <table border="1"><thead><tr><th>Outage ID</th><th>Substation</th><th>Equipment Name</th></tr></thead><tbody><tr><td>3042750</td><td>HUNTERS POINT PP P / MISSION X   LARKIN Y / POTRERO PP A (PGAE)   MISSION X</td><td>A-Y 2   BNK-2   P-X 1   P-X 2</td></tr></tbody></table>	Outage ID	Substation	Equipment Name	3042750	HUNTERS POINT PP P / MISSION X   LARKIN Y / POTRERO PP A (PGAE)   MISSION X	A-Y 2   BNK-2   P-X 1   P-X 2	Core	Operation Readiness	WebOMS
Outage ID	Substation	Equipment Name								
3042750	HUNTERS POINT PP P / MISSION X   LARKIN Y / POTRERO PP A (PGAE)   MISSION X	A-Y 2   BNK-2   P-X 1   P-X 2								
OMSPI-BRQ028	System shall allow the format of the Transmission Outage report published periodically automatically to support the following formats: <ol style="list-style-type: none"><li>PDF</li><li>HTML</li><li>MS Word</li></ol>	Core	Operation Readiness	WebOMS						
OMSPI-	System shall allow admin user to configure the number of days in the Transmission	Core	Operation	WebOMS						

**Client –**  
*understandable, and  
therefore verifiable.*

**Analyst –**  
*doable, within their  
natural lifetime.*

**Developer –**  
*unambiguous,  
complete, actionable*

Thinly-disguised, implementation-level  
design methods – *not* useful for  
discovering stakeholder needs



# Use cases to the rescue?

Use case - a description of a specific case in which an actor will use a system to complete a task or obtain a service

The idea –  
appealing in its  
simplicity

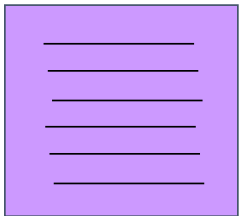
- Recognizable *tasks* provide *context*.

The reality –  
plenty of grief and  
confusion

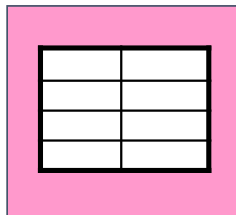
- “Use cases are wonderful but confusing.”  
Alistair Cockburn
- “A use case seems to be anything anyone wants it to be.”  
Charlie MacLachlan

- Granularity, form, content, perspective, used for, ...?
- How many use cases?
- Complete, self-contained methodology?
- Excessive complexity of some approaches

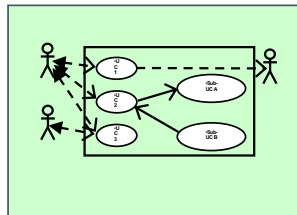
- Will the real Use Case please stand up? -



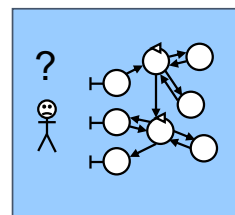
Meandering Narrative



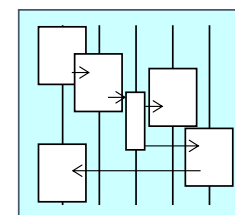
Tabular



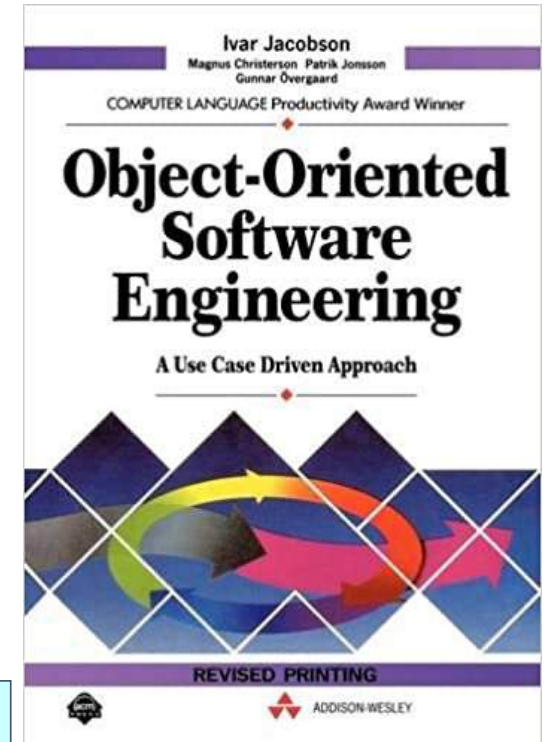
UML Use Case



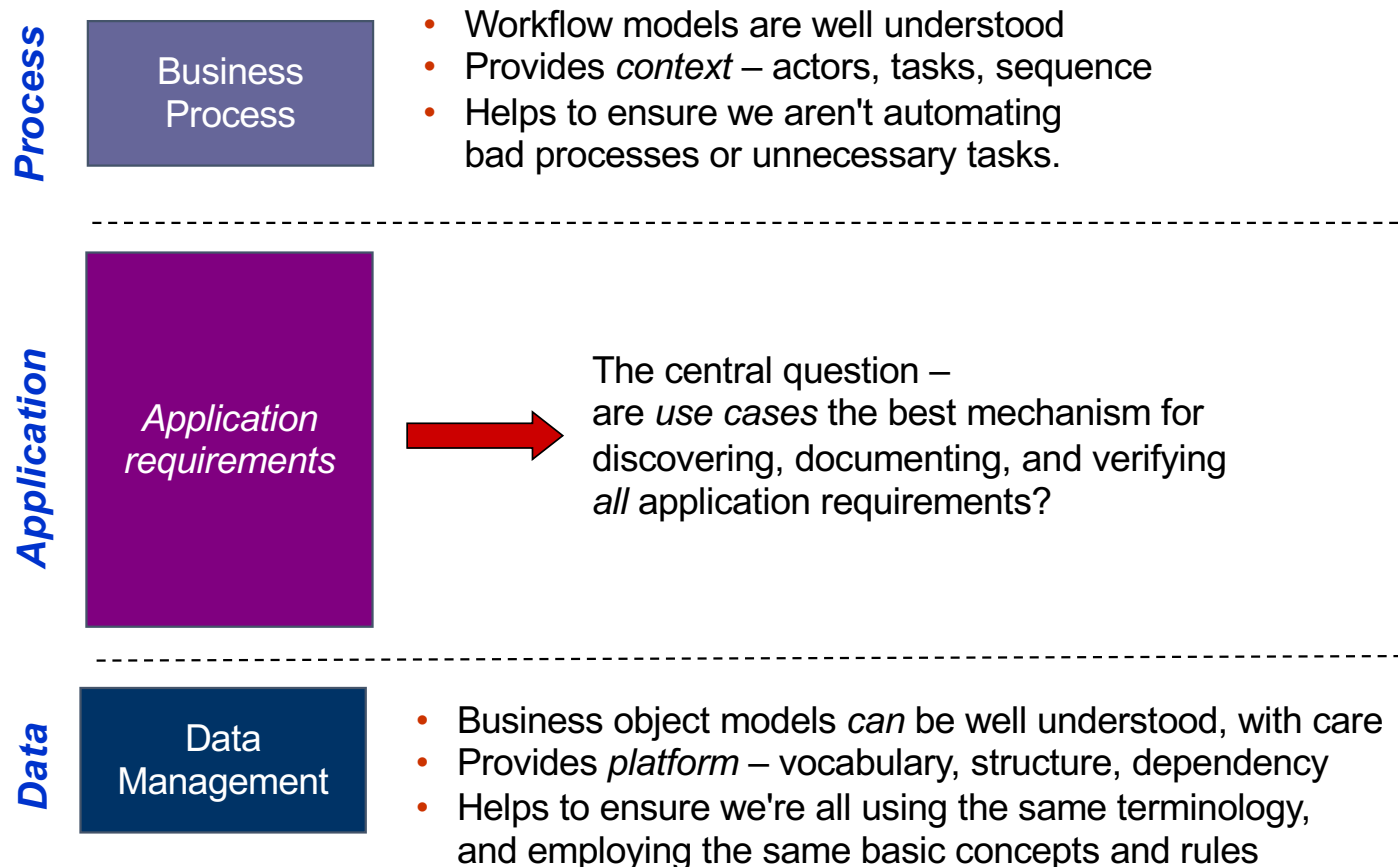
Ideal Object Model



Sequence Diagram

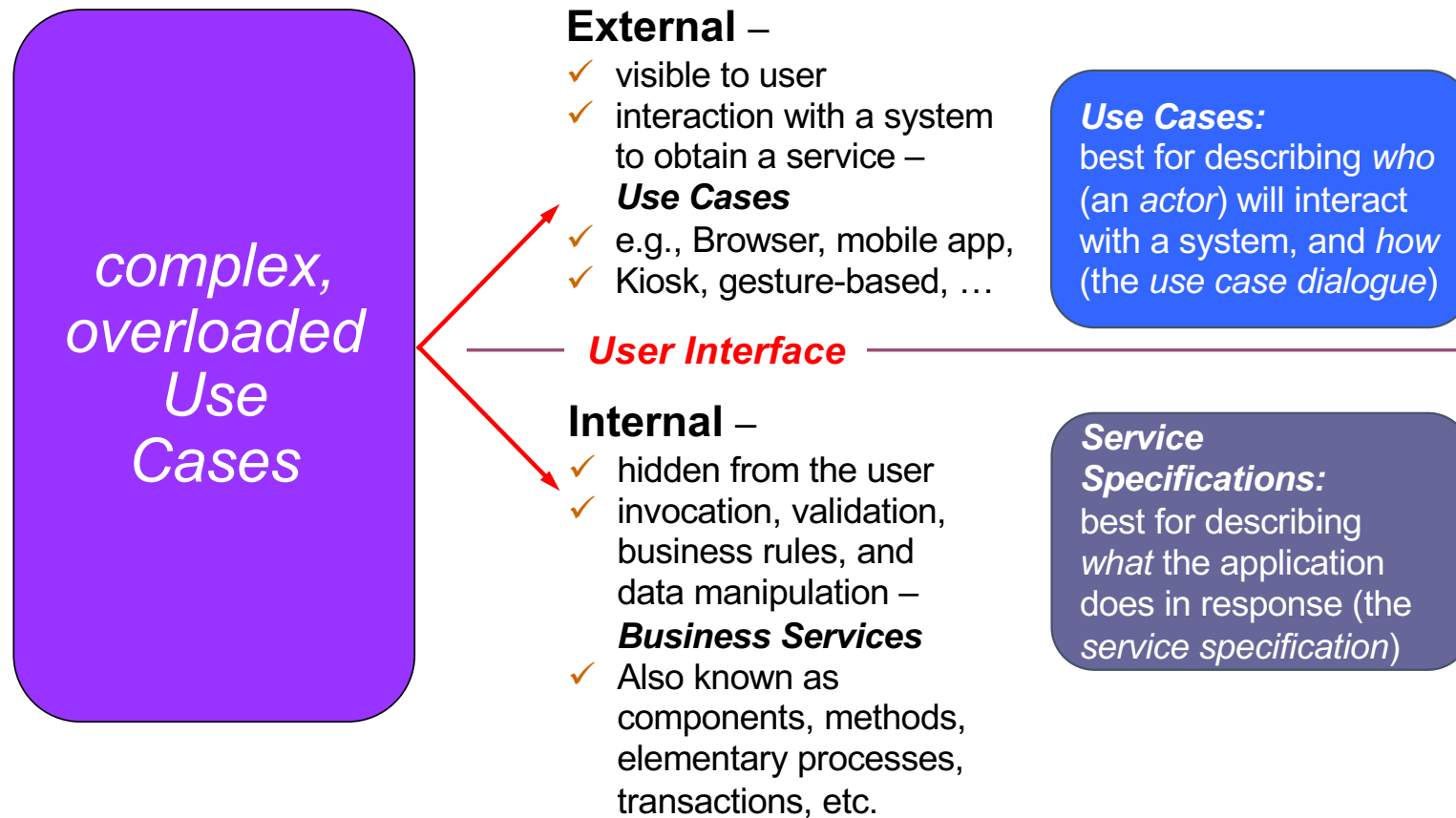


# Traditional use cases can't do it all, part 1



## Traditional use cases can't do it all, part 2

The central problem with many use case methods is a failure to recognise that applications have external and internal views –  
*“techniques that work for one don't work for another”*





# Services, Use Cases, Use Case Scenarios

Review, Check,  
Monitor, Track,  
Analyze, Enable,  
Handle, Process,  
Manage...

*No mushy verbs!!!*

*“Noun is Verbed” (Order is Placed) must be an essential event.*

Business  
Service:  
*Place Order*



Use Case:  
*Customer  
Places Order  
via Web*



Use Case Scenario:  
*Joe Bloggs, a Platinum  
customer, places a  
complex order involving  
four ship-to addresses...*

- ✓ Abstract or “essential” - no reference to “who or how”
- ✓ Action verb + noun (+ noun)
- ✓ Helps us to focus on the *essence* of *what* must be accomplished to operate the business
- ✓ Often surprising to a business to see what it really does, stripped of all procedural overhead

- ✓ Generalised (or “abstract”)
- ✓ Actor + service (or goal) plus (usually) technology (browser, purpose-built kiosk, IVR, ...)
- ✓ Helps us document different situations
- ✓ Same service can be accessed via multiple use cases
- ✓ Demonstrated in multiple UC scenarios

- ✓ Specific (or “concrete”)
- ✓ A scenario comprising a “worked example” of one or more linked Use Cases
- ✓ Scenario – a story or “vignette” including named actors, specific data values, and predefined decision outcomes.
- ✓ Helps put UCs in context, so users can contribute / verify.

# Relationships among Services, Use Cases, Use Case Scenarios

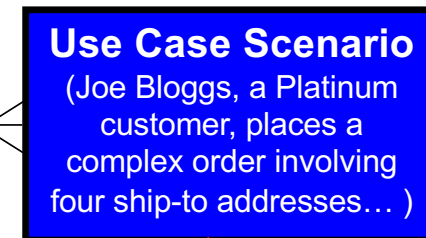
## Key Point

We follow an “inside-out” approach – services first, then use cases

How a specific actor, with a specific technology, will interact with the system to obtain the service.



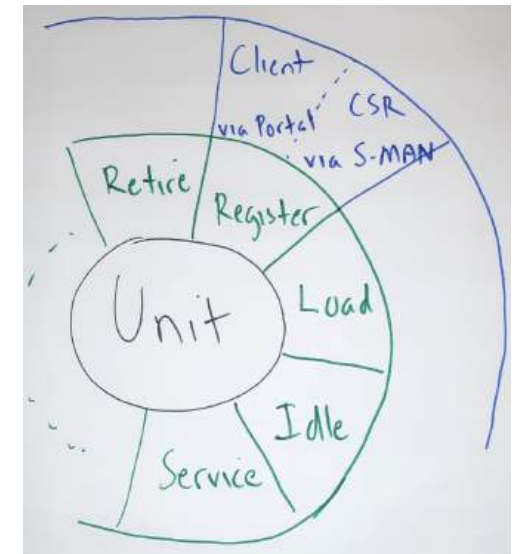
A single indivisible capability that must be carried out in order for the business to operate. It is the system's response (rules and data updates) to some trigger, and results in a business event



A “worked example” – a walkthrough of an actual session, encompassing one or more use cases, using named actors, predetermined data values, and predetermined decision outcomes. It is a single sequence of interactions with no branching or alternative flows.

## Discussion – one Business Service, one or more Use Cases

Multiple Use Cases	Who	One Service What (the Service – verb + noun)	How
	Client	Register Unit	via Portal
	Customer Service Rep (CSR)	Register Unit	via S-MAN (the ERP)
	Client	Register Unit	via Mobile App
	???	Register Unit	???



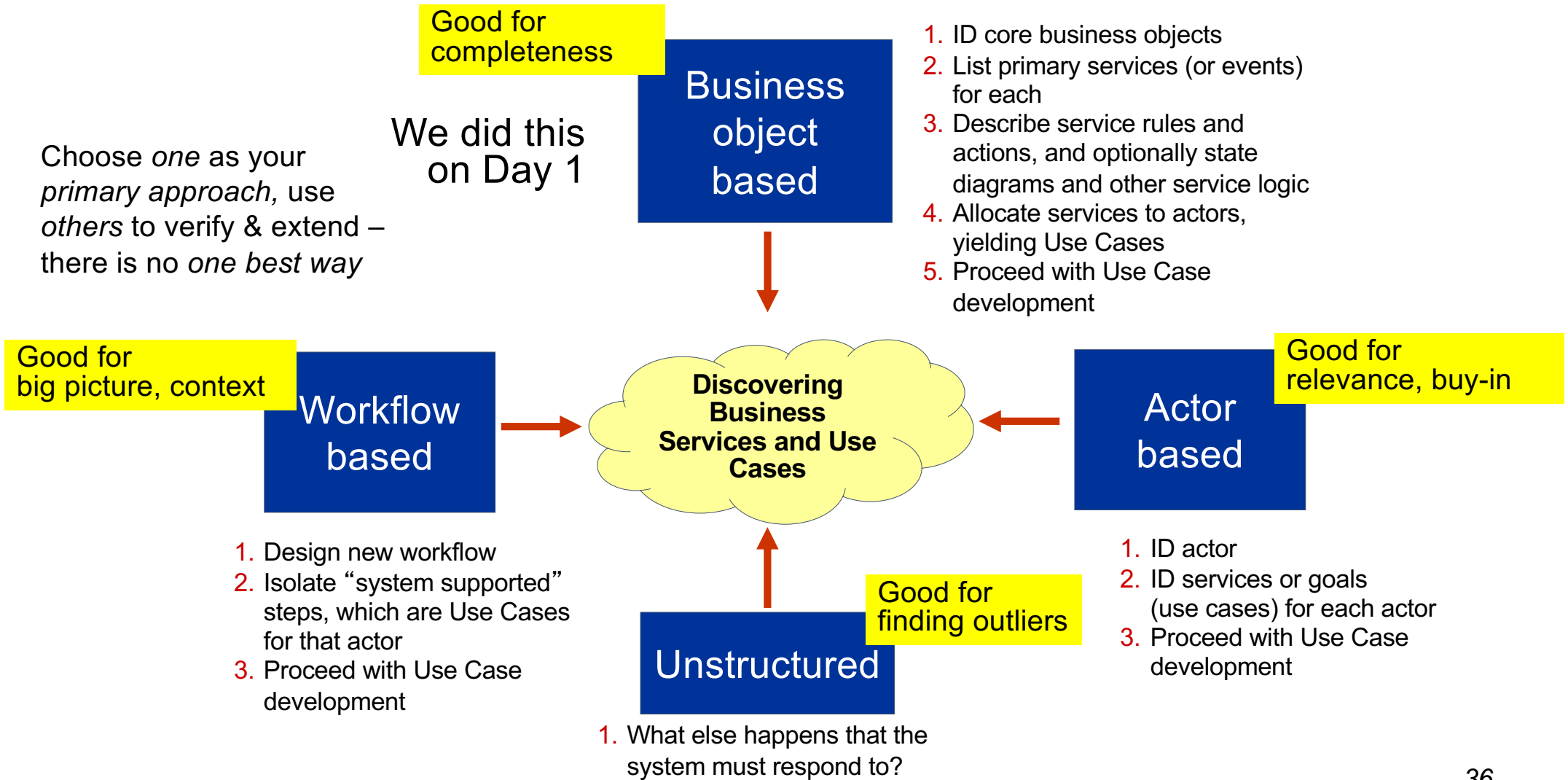
What is the value of documenting the Service only *once*?  
("One Service available through multiple channels.")

- re-use of the asset, and therefore higher consistency
- better chance of getting it right – higher value from less effort
- if it's implemented as a single service, easier maintenance – it's in ONE place.

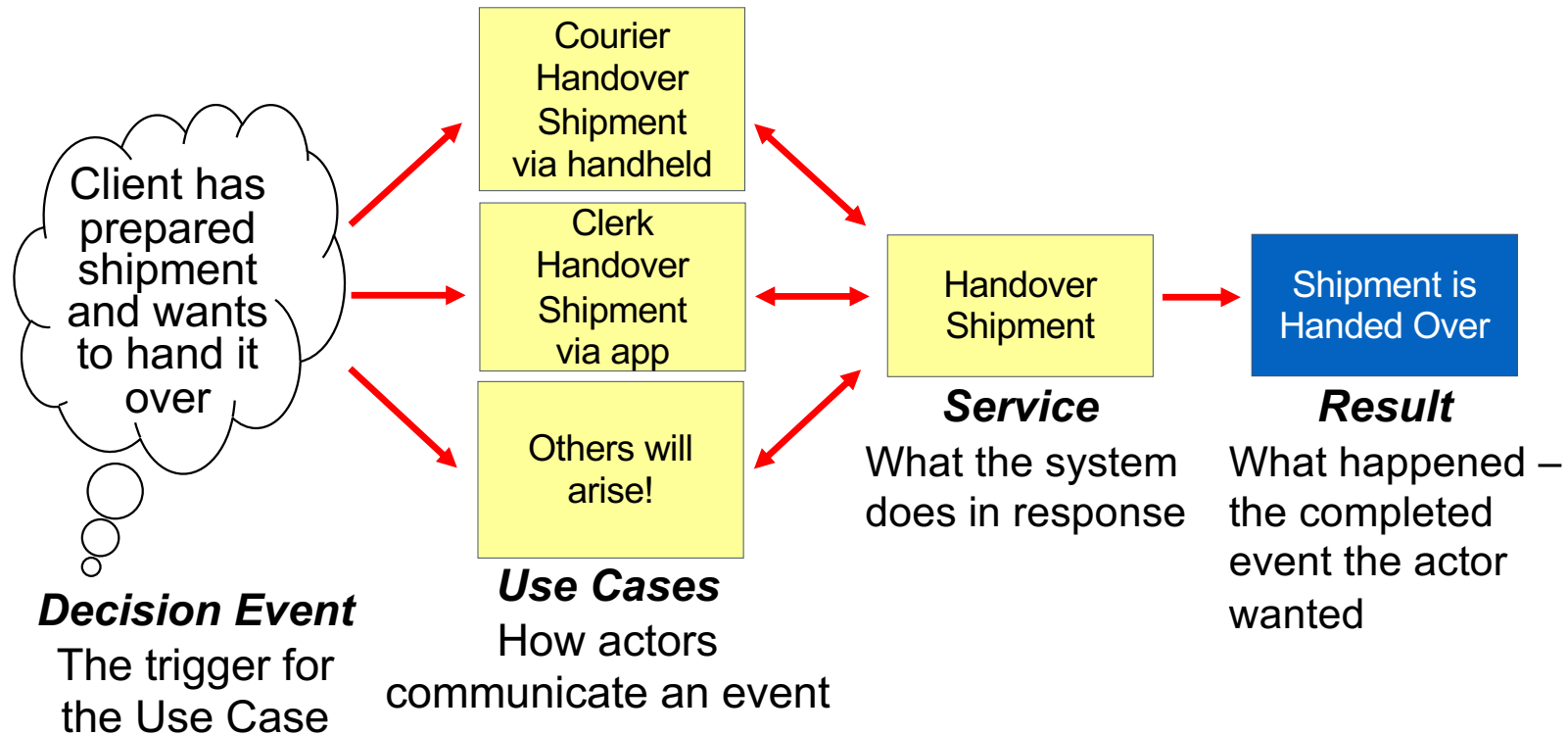
Why would we make a *single* Service available via *multiple* Use Cases?

- different actors need different "navigation and hand-holding,"  
e.g., casual vs. expert users
- different technology platforms have different capabilities,  
e.g., mobile phone vs. touch-screen kiosk

# Multiple discovery approaches



# Use cases, services, events



You can look at a use case as a mechanism for:

- ✓ An actor to notify the system that the actor *wants* the event to happen, e.g., Place Order
- ✓ An actor to notify the system that an event *has* happened, e.g., Change Address and they want the system updated (after the fact)

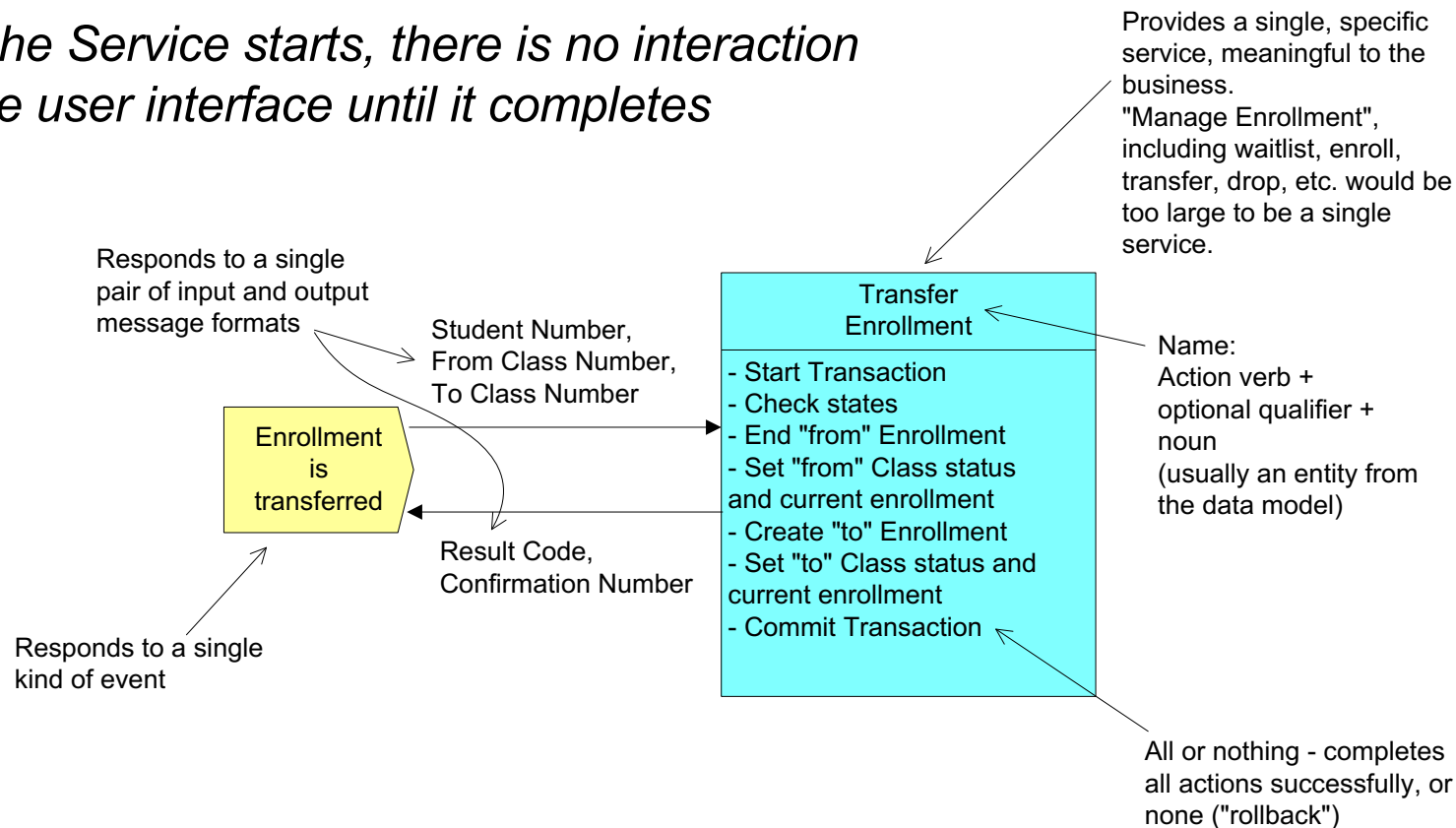
## Three kinds of events trigger services

<i>Action Event or Decision-Based Event</i>	<i>Temporal Event or Time-Based Event</i>	<i>Conditional Event or Data-Based Event</i>
Raised by an actor deciding to do something	Raised by the system when a predetermined date/time is reached	Raised by the system when a predetermined threshold is reached
E.g., <ul style="list-style-type: none"> <li>• Decision to Place Order</li> <li>• Decision to Raise Employee Salary</li> <li>• Decision to Submit Complaint</li> </ul>	E.g., <ul style="list-style-type: none"> <li>• Time to Place Recurring Order: trigger Place Order</li> <li>• Time to Pay Employee</li> <li>• Time to Submit Financial Statements</li> </ul>	E.g., <ul style="list-style-type: none"> <li>• Inventory Reorder Level is Reached: trigger Place Order</li> <li>• Temp &gt;0C &amp; &lt;40C: <ul style="list-style-type: none"> <li>• High temp threshold hit</li> <li>• Low temp threshold hit</li> </ul> </li> </ul>
<i>Always</i> introduces new data to the system	<i>Does not</i> introduce new data to the system	<i>Might</i> introduce new data – the measurement and time
<i>Needs</i> a use case for a human actor to convey event to the system a.k.a. a Real Use Case	<i>Does not</i> need a use case, except to “set” the alarm a.k.a. a System Use Case	<i>Does not</i> need a use case, except to “set” the data threshold a.k.a. a System Use Case

## Business Service guidelines

*“What”, not “who” or “how” – completely independent of actor and user interface.*

*Once the Service starts, there is no interaction with the user interface until it completes*

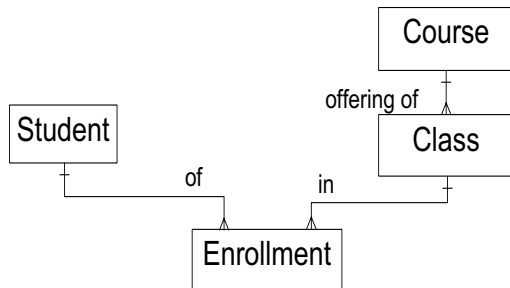


## Initial (concept level) service specification

	Component	Description	Notes
1	Name	The Business Service name	<ul style="list-style-type: none"> <li>Typically “action verb + noun” or “action verb + noun + noun”</li> </ul>
2	Result	A short (1 – 3 sentence) description of how the world (and therefore our records of it – files or databases) are changed by successful completion of the service	<ul style="list-style-type: none"> <li>Must use the language of the business object model and any other pre-defined artifacts (e.g., standard calculations like metrics)</li> <li>Must make sense to both business and technical audiences</li> </ul>
3	Action	5 +/- 2 (give or take) bullet points describing the key steps that comprise the service	<ul style="list-style-type: none"> <li>Again, uses the language of the business object model and any other pre-defined artifacts, and makes sense to both business and technical audiences</li> <li>Focus is on “what, not how” and successful completion (not all the exceptions)</li> <li>Will describe essential validation, and the core operations and data updates</li> <li>Corresponds, in part, to “acceptance criteria” in a user story</li> </ul>
4	Notes	Any additional requirements, assumptions, or questions that arise	<ul style="list-style-type: none"> <li>May include requirements (e.g., constraints or business rules) that will later be captured in the detailed service spec, or elsewhere, e.g. the use case or object model</li> </ul>



## Initial (concept level) service spec example



	Component	Description
1	Name	Complete Enrollment
2	Result	Enrolls a qualified Student in a single Class by creating an Enrollment record linked to Student and Class
3	Action	<ul style="list-style-type: none"> <li>• Validate Student status and prerequisites</li> <li>• Confirm space in Class</li> <li>• Create Enrollment, link to Student and Class</li> <li>• Generate confirmation number</li> <li>• Revise remaining space in Class</li> <li>• Apply fee to Student Account</li> </ul>
4	Questions & Assumptions	<ul style="list-style-type: none"> <li>• Does this need to be able to create an Enrollment in “waitlist” status?</li> </ul>

Now, review main actions with subject matter experts (SMEs) and ask:

- “Would you usually do *more* or *less* than this?”  
That is, is the service too *small* or too *big*?
- “Have we missed any important Actions?”