Train-the-Trainer for Booking's 2-day version of *Business-Oriented Data Modelling Masterclass* – *Tips, Tricks, and Techniques for Teaching the Class (and running actual modelling sessions)*

Adept Events and Clariteq Systems Consulting

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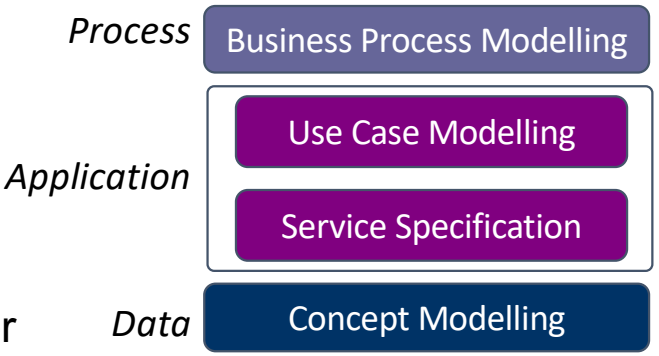
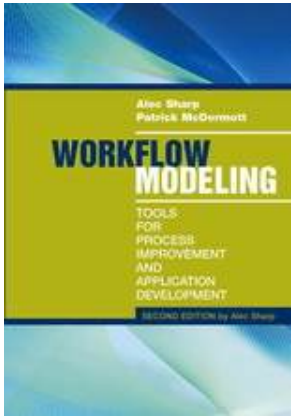
Reminder – my background…

Alec Sharp, Clariteq Systems Consulting – *asharp@clariteq.com*

- 45 years global experience as an independent consultant:
  - Business Process Modelling & Business Process Change
  - Application Requirements Specification
  - Data Modelling and Management
  - Facilitation, Organisational Change, Project Recovery
- Awarded DAMA's global Professional Achievement Award for contributions to "human-friendly" data modelling
- Author of "Workflow Modeling"
  - best-selling book on process modelling & improvement
  - second edition – a complete re-write
- ***Disclaimer!***
  - **I have never done a Train-the-Trainer class**
  - **This will be very collaborative – together we will identify good techniques for trainers, and practice collaborative facilitation**



Check out the nice reviews on Amazon - http://amzn.to/dHun1o



…and our small, husband & wife company

ABB (ASEA Brown Boveri)
Aflac
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Eurojust (European Justice Comm.)
European Central Bank
Fortum
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Home Depot
Idaho Transportation Dept.
Intel
ISO New England
ING Bank
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LGM Financial Services
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Livestock Improvement Corp.
MacDonald Dettwiler
Manitoba Public Insurance
Marathon Pipe Line
Microsoft
Ministry of Defence - UK
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MTS Allstream
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Novo Nordisk
Nusenda Credit Union
OP Bank
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Roche Diagnostics/Pharmaceuticals
Salt River Project
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Serco
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The MUSIC Group
The Seattle Times
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University Med Ctr Groningen
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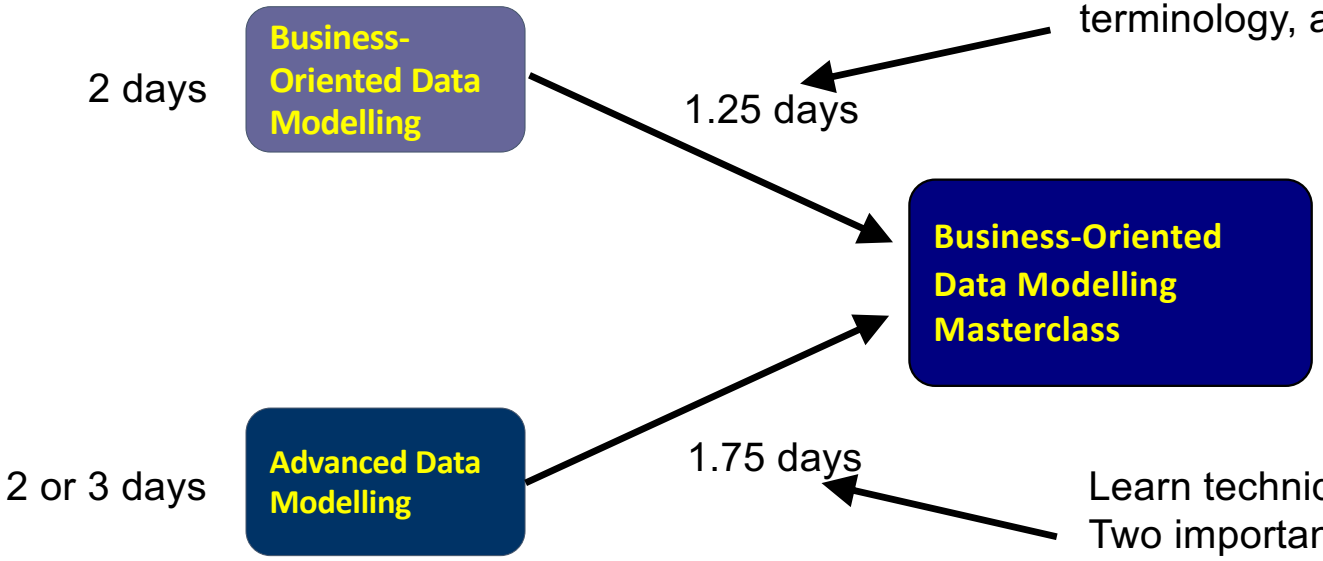
– *Higher Education* –
Carnegie Mellon University
Cornell University
Douglas College
Gonzaga University
Humboldt State University
The Jackson Laboratory
The Ohio State University
Portland State University
Salt Lake Community College
Southern NH University
University of Arkansas
University of British Columbia
University of the Fraser Valley
University of Maryland
University of Utah
University of Washington
Utah Valley University

And a reminder – background for the Data Modelling course



Get everyone, even experienced modellers, to the same baseline of concepts, conventions and terminology, and our unique *business-friendly* approach.

~~3 days in-person~~

2 days in-person for this Booking.com version. *Core content is still here!*

Learn techniques for modelling more complex situations. Two important notes:

1. Our focus is on engaging businesspeople in *conceptual and logical modelling* of *operational data* - master data, transactional data, & reference data.
2. This is ***not*** a class on physical database design or implementation strategies (e.g., Data Lake or Data Fabric or Data Mesh or Data Products) and is ***not*** a class on Data Governance, Data Management, or Data Strategy – it's about *modelling*.

And, finally, a reminder of course structure

Fundamental and Advanced Topics

1. Introduction and Level-set
   - Introduction, Hands-on Case Study
   - Essentials of Concept Modelling
   - Transition from Conceptual to Logical
2. Interesting Structures
   - Types vs. Instances
   - Recursive Relationships
   - Subtyping / Generalisation
   - Meeting New Requirements
3. Rules on Relationships and Associations
   - Multi-way Associatives & Complex Rules
   - Advanced Normal Forms (4NF & 5NF)
4. Presentation Techniques for Data Modellers
   - A (painful) Learning Experience
   - Core Techniques for Presenting
   - A Real-life Example

Schedule (CET)

- 09:00 - start
- 09:00 - 10:30 *class*
- 10:30 - 10:40 break
- 10:40 - 11:55 *class*
- 11:55 - 13:00 lunch
- 13:00 - 15:00 *class*
- 14:50 - 15:00 break
- 15:00 - 17:00 *class*
- 17:00 end

At last…***you*** –

- Name (how should I address you?)
- Brief description of your experience with Concept Modelling / Data Modelling
- Have you identified a topic you would like to present?

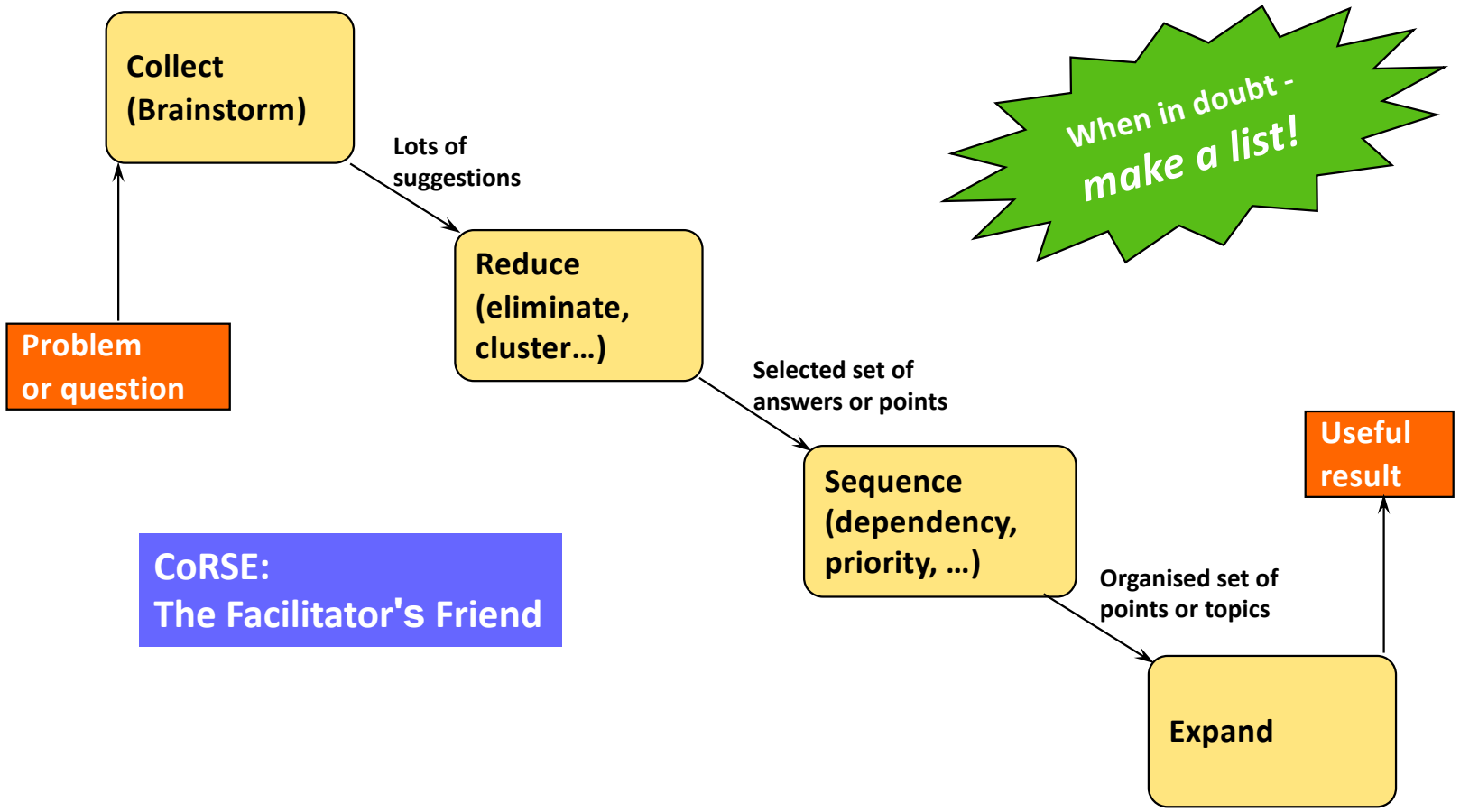
Deelnemers

Jonathan Bertscher	ABU	Senior Data Manager I
Yatharth Tyagi	Accomodations	Lead - Marketing Technology
Kirill Skaletskiy	Central Tech	Senior Data Quality Specialist
Chris de Groot	Customer Service	Manager Data engineering
Carolina Maia	Customer Service	Data Engineer II
Yueling Jiang	Finance FPA	Data Architect
Gaurav Mitrani	Fintech	Architect
Igor Dralyuk	Fintech	Solutions Architect
Iryna Prykhodko	Fintech	Architect
Omer Teken	Marketplace	Data Manager II
Victor Marin	People	Data Analyst II
Floris de Wilde	People	Data Engineer II
Kiran Kodandoor	Trips	Principal Software Engineer I • Engineering - Business
Kieran Peat	Trips	Principal Software Engineer II • Engineering - Business
Jeanette Bosch		Director of Enterprise Data Architecture
Jagdish Choudhary	Trips	

Our first instructional / facilitative technique – "brainwriting"

- Whether facilitating a modelling session or a training session, we will often want to collect ideas from the group and then select the ones we will go forward with
- "Brainstorming" is a typical approach
- "Brainwriting" has advantages

Use "CoRSE" to collect and select ideas



"CoRSE": the specifics

Collect (Brainstorm)

- State problem or question
- Going clockwise (fast) everyone makes <u>one</u> suggestion
  - "pass" if nothing to add
  - "pure" brainstorming is random, not "in turn"
- Stop when everyone 'passing', or agreement to stop, or time's up
- Record without editorialising
  - might ask for short phrase
  - might paraphrase for confirmation
- Keep it moving, enforce rules
- *No discussion*
  - quick clarification or positive comments okay
  - *absolutely* no negative commentary

Reduce

- Eliminate: redundant, out of scope, …
- Cluster
- Select

Sequence

- Goal: workable sequence
- By priority, dependency, chronology, …
- Not permanent – just to organise the session

Expand

- Collect more info: define, alternatives, pro/con, …
- Apply CoRSE on each item

Applying CoRSE to starting a concept model (or anything!)

1 **Brainstorm…** *Collect*

- ✓ For "anything related to data or information in any way, shape, or form" (e.g., things of interest, information needs, facts, queries, calculations, reports, etc.)

2 **For each item, ask "Is this a *thing*, a *fact about a thing*, or *other stuff*?"** *Reduce*

- ✓ Circle *things*
- ✓ Cluster *facts* around the appropriate thing
- ✓ *Other stuff* will include reports, forms, transactions, departments, processes, etc. –
  use these as *clues* for *more* things and facts about things

3 **Develop initial E-R diagram** *Sequence*

- ✓ Kernels at the top
- ✓ Top-down dependency!!

4 **Entity definitions and attributes** *Expand*

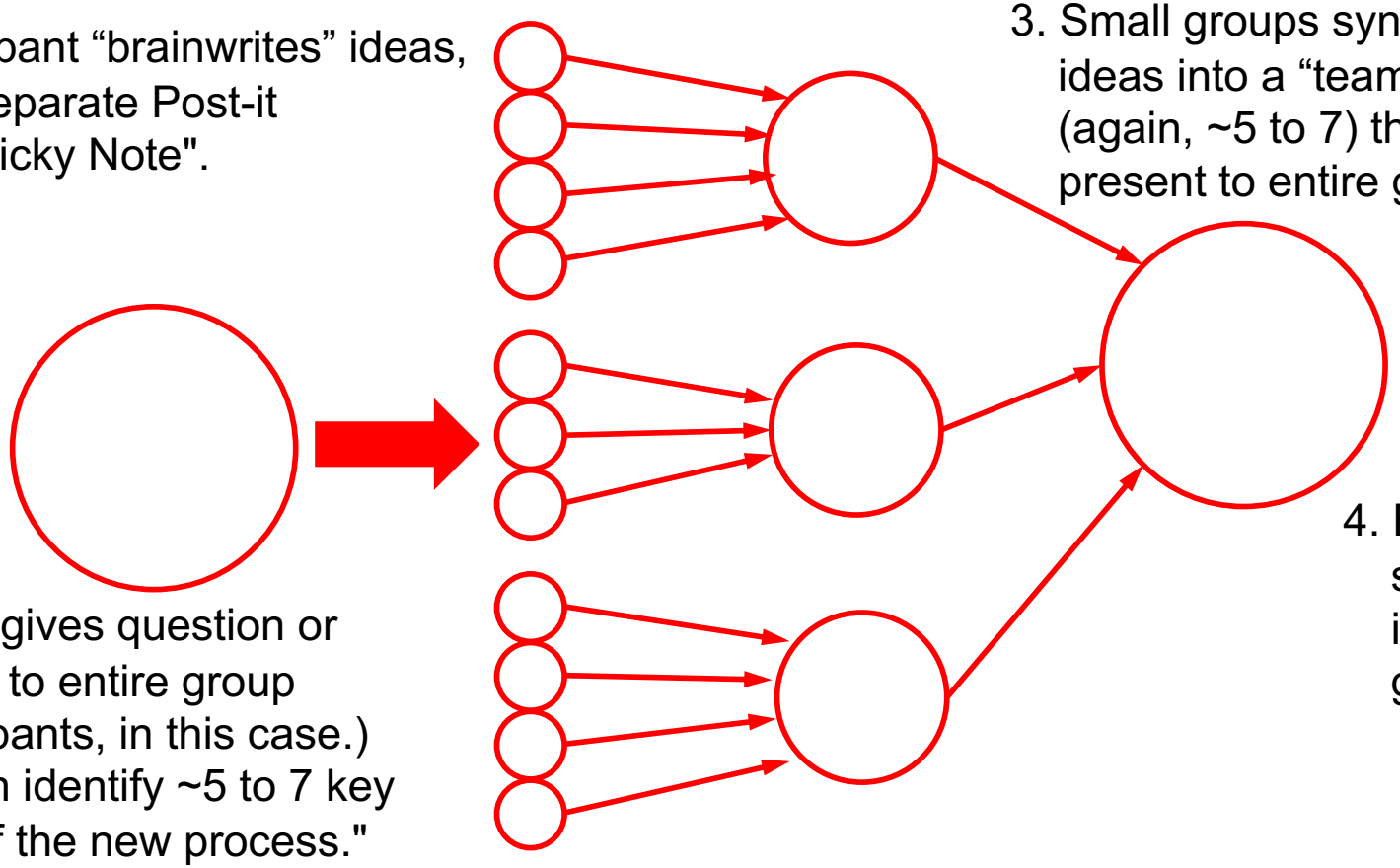
- ✓ Focus on anomalies and "likely sources of confusion"
- ✓ Don't worry about normalisation, generalisation, keys, …

"Brainwriting" as an alternative

What are the advantages of "brainwriting?"

2. Each participant “brainwrites” ideas, each on a separate Post-it or virtual "Sticky Note".

3. Small groups synthesise ideas into a “team effort” (again, ~5 to 7) then present to entire group.

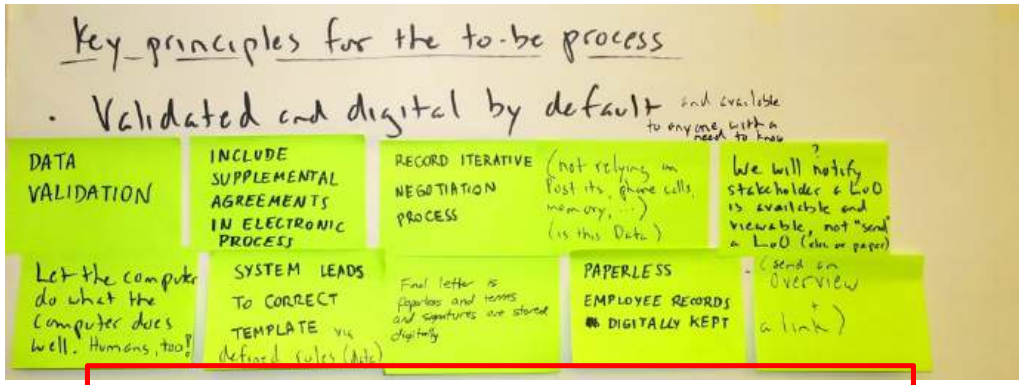


1. Facilitator gives question or instruction to entire group (11 participants, in this case.) "Let's each identify ~5 to 7 key features of the new process."

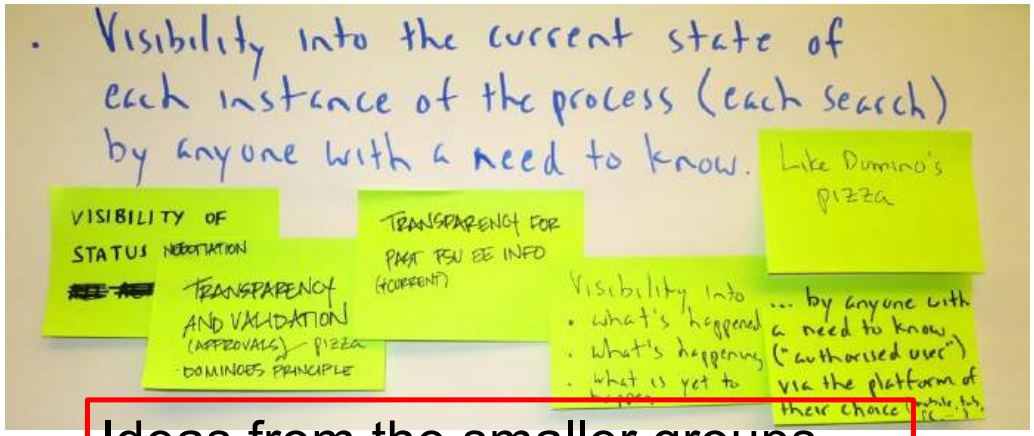
4. Entire group synthesises ideas into a group effort

Example – determining features of the to-be process

Synthesis of features from group suggestions…



Ideas from the smaller groups…



Ideas from the smaller groups…

Five of seven features determined by the team

1. Data digital by default, validated and captured at source, and suitable for all downstream use.
2. Visibility into the current state of each instance of the process (each faculty search) by anyone with a need to know.
3. Separate the "need to approve" from the "need to be informed."
4. Each search will follow a defined and visible workflow.
5. *The process will be designed for digital signatures **only – no fallback!***

Lucidchart / Lucidspark, Miro, or even Google Jamboard are perfect for a brainwriting session like this.

First brainwriting exercise: good and "not so good" facilitators

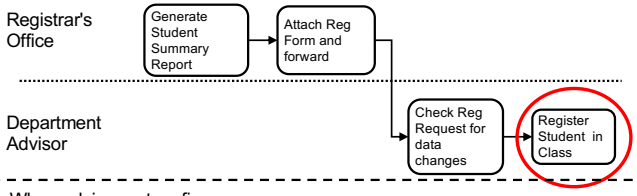
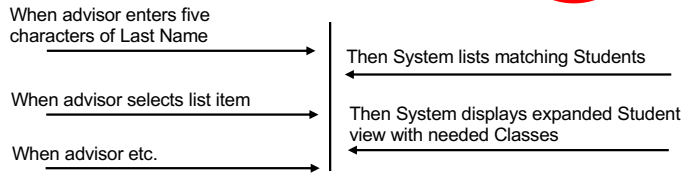
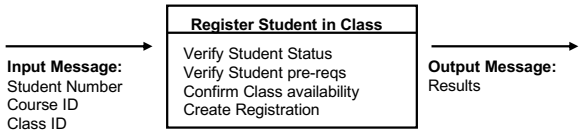
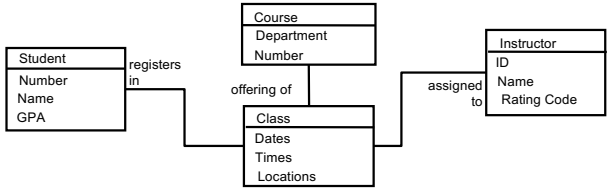
- Instructor will organise class into small teams
- Individually, list one idea per small yellow Post-It:
  - 3 - 5 things you've seen ***good*** facilitators/instructors do
  - ~~3 - 5 things you've seen "***not so good***" facilitators/instructors do~~
- As a team:
  - choose the top five things ***good*** facilitators/instructors do ~~and choose the top three things "***not so good***" facilitators/instructors do~~
  - record each on a large green Post-It
  - prepare to present your choices to the class
- The entire class will synthesise a "top five" list

Second brainwriting exercise: key features of our modelling methods

- Individually, list one idea per small Post-It:
  - what are the "***key features***" of the modelling techniques presented in our "Business-Oriented Data Modelling Masterclass?"
  - what do you want learners to realise about the methods?
  - again, approximately 3 features of the methods we're teaching
- As a team…
- The entire class…

1 – An integrated, model-based framework…

The Clariteq Framework for Business Analysis

Framework Layer	Technique sample	What it covers
Business Goals & Objectives	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.	✓ ***Project Charter*** – documents the rationale, objectives, scope, and success measures for the project
Business Process		✓ ***Process Model*** - shows "what" in a Scope Model, then "who & how" in a Workflow Model – the steps done by the actors in the process
Presentation Layer (user interface)		✓ ***Use Case*** – models how an actor interacts with a system to obtain (trigger) a service, typically to complete a step in a process
Application Layer (rules & logic)		✓ ***Service Specification*** - describes a service – a package of rules and logic – that is triggered to complete or respond to a business event
Data Layer (data & storage)		✓ ***Concept Model*** - depicts the things and the facts about things the organisation needs to record; the things (the entities) are what processes and solutions act on.

This is not a sequence!

Business Process: gives great *context* for *Business Analysis*

Use Cases and Services: where we capture *Functional Requirements*

Concept Model / Data Model: a great *platform* for *Business Analysis*

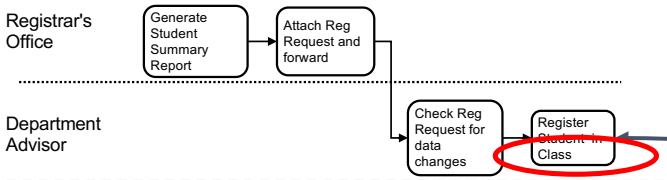
… with the Concept Model / Data Model as the foundation

All use the language and constraints of the Concept Model (the "thing model") – the ultimate "what"

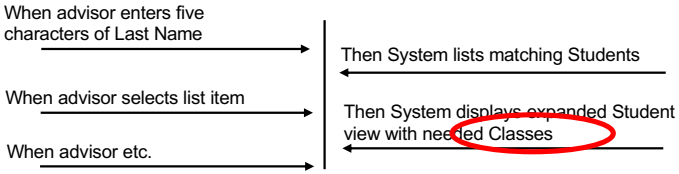
Business Goals & Objectives

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.

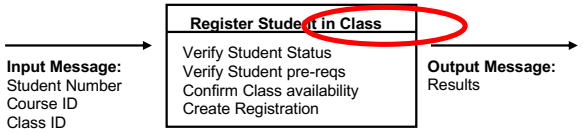
Business Process



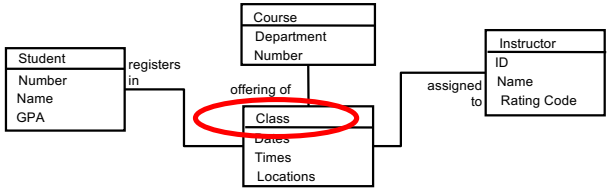
Presentation Layer (user interface)



Application Layer (rules & logic)



Data Layer (data & storage)



Use Case
actor + service + platform:
Advisor *Register Student in Class* via SRS

Service
verb + noun (+ noun):
Register Student in Class

Entity
noun:
Class

Use Cases/User Stories:
- Who (Actors) needs access to the Services, and how (Platform)?

Verb-Noun pairs:
- The *Services* (event-handlers) that are at the heart of a *Service Oriented Architecture.*
- *Also* "building blocks" of Business Processes

The core *Nouns or* Things in your enterprise. Also known as *Business Objects.*

Bonus – great starting point to discover your Events/Services and Use Cases/User Stories

2 – Progressive detail through well-defined levels

Clariteq framework for analysis and architecture

Project Charter: primarily "Scope" level - may evolve

		Scope	Concept	Detail	
Goals	Business Objectives				
Process	*Business Process*	Process Landscape showing target and related processes, Process Scope Model, initial assessment and goals.	As-is (and later, to-be) Workflow Models for the process' main variations (cases) to the Handoff level.	As-is Workflow Models to the appropriate detail, and to the Service level for to-be. Optionally, document procedures for manual to-be steps.	Process Modelling
Application	*Presentation Layer (user interface)*	List of the main Use Cases in the form: Actor + Service + (optionally) Technology / Platform (named only.)	Initial Use Case Modelling (goal, stakeholder interests, use case abstract) for each Use Case. May include initial dialogs.	Use Case dialogs in "when-then" format, annotated, and including alternate sequences. Optionally, Use Case Scenarios.	Use Cases
	Application Layer (rules & logic)	List of main Business Services (named only.)	Initial Service description - result, main actions, cross-referenced to Concept Model	Each service fully documented, including input/output messages, validation, business rules, and data updates to the attribute level.	Service Specification
Data	*Data Layer (data & storage)*	Contextual Model (optional) and a glossary defining the main entities and other important terms.	Concept Model (Business Object Model or Conceptual Data Model) with main entities, relationships, attributes, and rules.	Fully normalised Logical Data Model with all attributes fully defined and documented.	Concept Modelling
		Plan	*Understand*	*Specify*	

2 – Contextual, Conceptual, & Logical models

1 Contextual (Scope – Planner's View)

Agree context or "big picture" – the scope in terms of topics or subjects that are in or out, plus core terms and definitions

- May be a simple block diagram of topics/subjects, or primarily textual (a list)
- Optional – not necessary on smaller projects

My most plagiarised slide ever!

2 Conceptual (Overview – Owner's View)

Agreement on basic concepts and rules

- Ensures everyone is using the same vocabulary and concepts before diving into detail
- Overview: main entities, attributes, relationships, rules
- Lots of M:M relationships
- Relationships show cardinality
- No keys
- Few or no reference entities
- Unnormalised – most M:M relationships unresolved, many attributes will be multi-valued, redundant, and non-atomic
- Verified directly by clients plus other techniques: Use Cases…
- A "one-pager"
- 20% of the modelling effort

3 Logical (Detail – Designer's View)

Full detail for physical design

- Provides all detail for initial physical database design and requirements specification
- Detailed: ~ 5 times as many entities as the conceptual model
- M:M relationships resolved
- Relationship optionality added
- Primary, foreign, alternate keys
- Lots of reference entities
- Fully normalised – no multi-valued, redundant, or non-atomic attributes. All attributes defined and "propertised"
- Verified by other means: sample data, report mockups, scenarios, …
- May be partitioned
- 80% of the modelling effort

3 – Clearly defined, step-by-step methods

Identify and define "Things"

1. Collect terms
- 1:1 interviews
- survey (e.g., email)
- group brainstorm
- analyse documents

2. Isolate "things"

Ask *Is this…*
- a thing?
- a fact about a thing?
- or "other stuff?"

3. Identify synonyms
- select a term to use
- as general as possible
- just for this initiative, not the entire enterprise

4. Define each thing
- "good enough for now"
- first, identify "anomalies, sources of confusion, and valid differences of opinion"
- select which to include

Develop initial Concept Model

5. Organise things
- independent things across the top
- then laid out top-down by dependency

6. Draw relationships
- show dependency
- parent-child drawn bottom-to-top
- otherwise, side-to-side

7. Name relationships
- in both directions
- active verb-based!
- not mushy – *has*
- not meaningless – *related to*

8. Add cardinality
- use words first
- 1:1 is probably wrong
- 1:M (one to many)
- M:M (many to many)

Refine Concept Model

9. State assertions
- forcefully, for each relationship
- challenge the assertions!
- restate the assertion & why it changed, if it did

10. Redraw the model
- shows revised assertions
- e.g., 1:M becoming M:M
- e.g., dependent things becoming independent

11. Collect attributes
- a few for each thing
- not *all* attributes
- don't worry about normalisation

12. Move to identifying:
1. events / services
2. use cases / user stories

Third brainwriting exercise: your questions and concerns

- Individually, list one idea per small Post-It:
  - what are the specific "***concerns, questions, or techniques***" you want addressed in this Train-the-Trainer workshop
- As a team…
- The entire class…

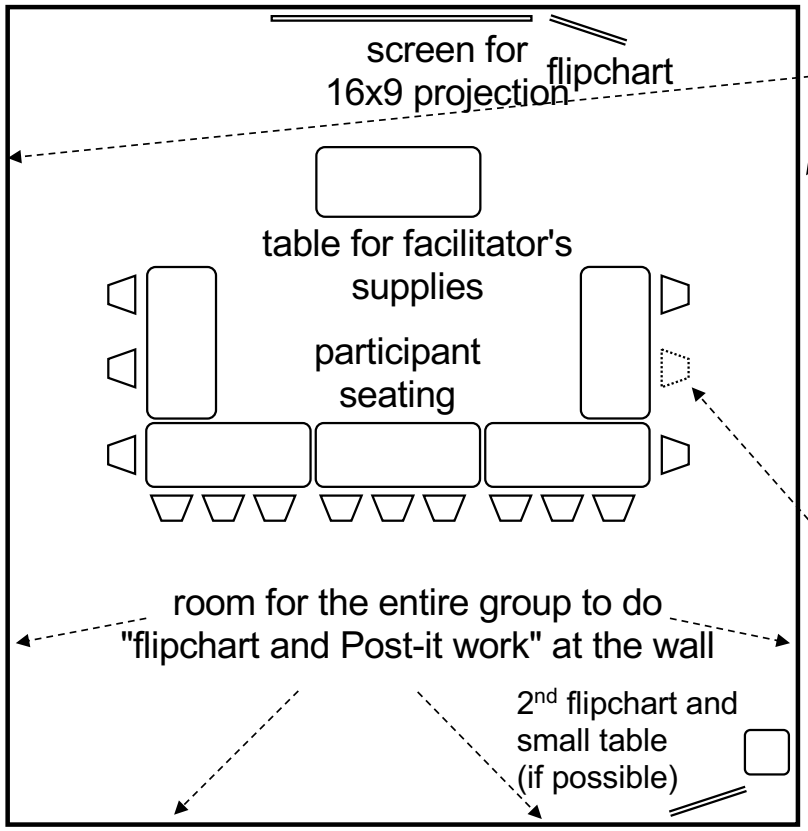
Let's discuss the room…

- The instructor will draw two room layouts –
  - a "good" one
  - a "bad" one
- Why is the "good" one good?
- Why is the "bad" one bad?

Facilities

Facilities have a huge impact on the success of a training session or facilitated session

- comfortable, roomy, and well-lit (*bright!*)
- tables and chairs arranged in a wide U or semi-circle
- *lots of empty wall space!*



"plain" wall space
for posting flipcharts

Don't forget:

- flipchart pens and whiteboard pens
- fine-tip Sharpies for participants to write on Post-its and *lots* of 3"x3" and 4"x6" Post-its
- flipchart stand with bright white flipchart pad (*not* Post-it self-adhesive style)
- "wall safe" masking tape (painter's tape)
- rolls of plotter paper or butcher paper (e.g., for process mapping)

no empty seats –
they're "energy holes"

The note we send in advance (1)

The room requirements are straightforward, but have a major impact on the success of a workshop:

1. A ***bright***, well ventilated room (not a room with PC workstations) with ***lots of "plain" wall space (no artwork, pillars, etc.)***
2. ***The room must include an area where the entire class can gather at a large, "plain" wall area for "flipchart and Post-it work"***
3. Seating for up to 16 participants at ***tables arranged in a "wide U" shape***

Also:

- A 16:9 full HD projector and screen, or large TV monitor
- A flipchart stand with a full pad of bright, white paper (***not*** Post-it style flipcharts that have adhesive pre-applied)
- A table at the front of the class for the instructor's supplies
- If there's a whiteboard, that's a bonus, but it isn't essential
- The room should be reserved overnight between the days of the class because a large amount of material is left posted on the walls

The note we send in advance (2)

The first three points are highlighted because this is where we most often run into difficulties. The points are important because:

1. A big part of the workshop's "immersive" experience is having resources (flipcharts, Post-its, etc.) posted on the walls so they can be referred to throughout. "Plain" wall space is essential, as is bright lighting!

2. An even bigger part of the experience is having the group participate in worked examples up at the wall. An area where the entire group can gather at the wall for "flipchart and Post-it" work is mandatory.

3. The "wide U" shape is not absolutely necessary, but it helps participants see each other during discussions and keeps everyone more equidistant from the instructor. In a "narrow U" the people at the rear more easily become disengaged. "Classroom style" (rows of tables, or tables arranged in a chevron shape) is fine if a "wide U" configuration would prevent having room for group work

A few discussion points

1. Using the space
   - the "facilitation zone"
   - placing yourself

2. Some mechanics
   - working with flipcharts
   - working with Post-its

3. Anything else?

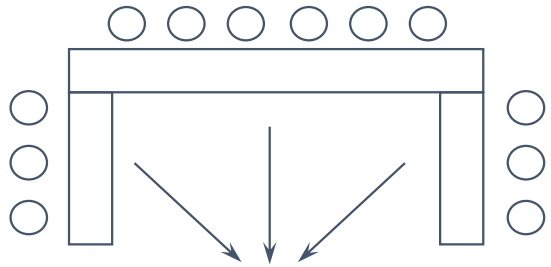
Now, let's get some practice with presenting the material…

- If you want, I can do a demonstration/reminder of how I present the material
- Everyone will present for 10-15 minutes
- The group will provide feedback
  - what worked?
  - what is *one thing* that can be improved

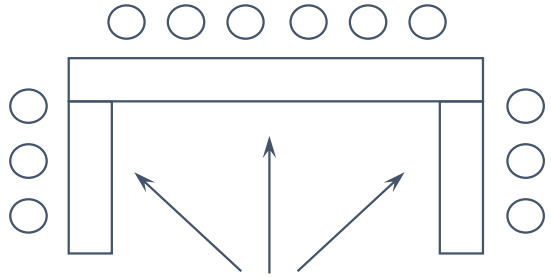
Now we decided to look at some facilitation techniques…

Two kinds of group sessions

- Facilitated Sessions are primarily for having a group:
  - establish objectives and plans
  - identify / solve problems
  - gather requirements
  - build models…



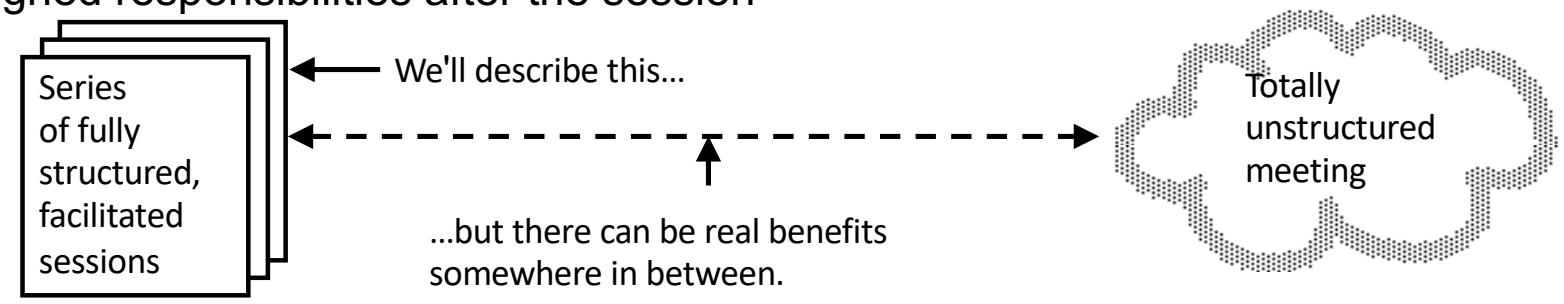
- Presentations are primarily for sharing information with a group:
  - project proposal
  - status update
  - review modelling deliverables…



- Always elements of one in the other

More than someone with a pen and a flipchart…

- ***Led by a neutral facilitator***
- ***Documented results – constant, visible, written record***
- Clearly defined scope and objectives
- A task-based plan - product, method, time
- The right people - knowledge and authority
- Defined roles
  - sponsor and/or project manager (may not participate in session)
  - facilitator (someone in charge)
  - participants
  - scribe / recorder (optional)
- The use of “facilitative” rules and techniques
- Assigned responsibilities after the session



Initiate the session (this is critical!)

1 - Purpose

- Greeting and introductions
- Review and post:

  Project Scope and Objectives

  Session Scope and Objectives

  Session Plan/Agenda (Note that timing may not be precise, and adjustments may be made dynamically, as needed.)

2 - Responsibilities

Review and post:

Participant's Role

Facilitator's Role

3 - Contract

"Any questions?"

"Any suggestions for additional roles/behaviors?"

"Do we all agree?"

How we'll work together

Participant's Role:

Participate!
- represent your area
- speak up, because *silence is agreement!*

Be brief and stay on topic

One conversation at a time
- no interruptions
- no side conversations
- no electronics

Keep the facilitator neutral

Facilitator's Role:

Help everyone participate

Ensure constant, visible, written record is kept

Keep session moving and on topic

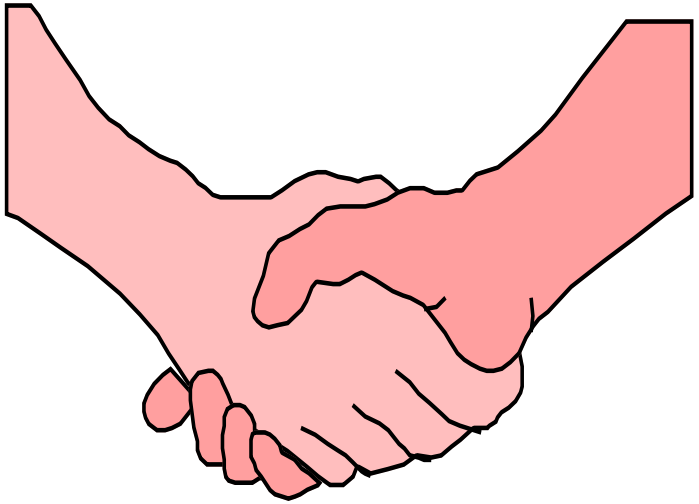
Stay neutral

Establish the contract

- *Agree on objectives and plan*
  "Well, that covers the plan and objectives. Are you comfortable with them? Any additions or revisions?"

- *Agree on behaviors*
  "Can you all agree to follow the guidelines? Are there any additional points you'd like to see up there?"

- *Agree on roles*
  "I may suggest ideas on how we proceed, but all decisions are up to you. It's important for me to stay neutral. If you feel at any time that I'm showing any bias, please let me know"



Essential facilitator behavior #1

Write it up!

- It doesn't have to be right –
  they'll tell you if it's wrong!

**Without a visible, written record,
what do you have
when the session is finished?**

- Forms the session's product -
  - "group memory"
  - records progress, decisions, issues, questions
  - defers off-topic items without offending ("bin list" or "parking lot")

- ***A fundamental tool for the facilitator:***
  - interject and ask "What should I record here…?"
  - while you're writing, they'll use the time to absorb and consider

- Essential for dealing with issues -
  - something concrete to discuss, agree, or disagree
  - prevents going in circles ("nails down the point")
  - depersonalises

Essential facilitator behaviour #2

Scan and ask!

Why?

1. Everyone has a point of view and wants to be heard…
2. …but many won't speak up without encouragement
3. Luckily, most people can't or don't hide feelings…
4. …so, your job is to draw out their participation by asking

! Scan for…

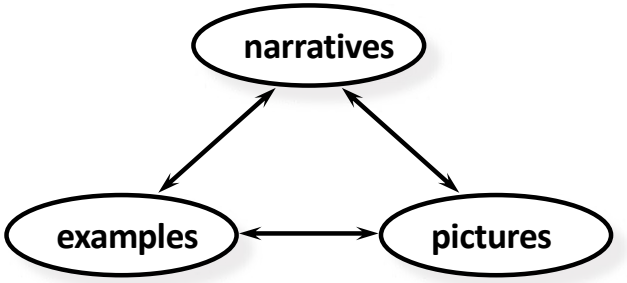
- Facial expression
- Other body language
- Non-participation

Asking specific participants for input is essential - it's not "putting them on the spot"

Essential facilitator behavior #3

Alternate among different communication styles and perspectives

- Different people have different preferred modes:
  - Visual – likes the pictures,
    says "I *see* where you're going…"
  - Auditory – likes the words (written or spoken),
    says "I *hear* what you're saying…"
  - Kinesthetic – likes examples and scenarios,
    says "I *feel* like I understand your point…"



- Adds interest and variety for *all* participants

- Validation and completeness through
  - Different perspectives
  - Encouraging full participation

Five facilitative behaviors + 2

What You Do

- ***Write something up***
- ***Scan, watch expressions and body language, and ask***
- **Use alternate forms of information – V-A-K**
- **Find areas of agreement**
- **Take time to think, and use the group**
- **Remember *your* role – facilitate, not participate**
- ***Acknowledge what is***

What They'll Do

- ***Tell you if it's wrong***
- ***Appreciate the opportunity***
- **Build a better product**
- **Take care of the disagreement**
- **Use the time too, and generate the way forward**
- **Do *their* job – you stick to yours**
- ***Deal with it***

Ten tips for staying out of trouble

1. The golden rule – get organised beforehand

- *identify sponsor*
- establish scope, objectives, and plan
- try to understand organisation
- try to understand issues and objectives
- identify difficult participants or hidden agendas
  (note – we usually find that the people we've been "warned" about are excellent participants)

2. Keep it simple

- a simple process is best (e.g., consensus vs. weighted vote)
- search for a simple organising framework
  (e.g., the five main activities, then trigger and results for each)

Ten tips for staying out of trouble

3. Take control *early*!
   - strong enforcement initially, ease up later
   - use a graduated response

4. *Use* the group memory
   - if they digress, or regress, or “misbehave”
     - the objectives, plan, and behavior they *agreed* to
     - the conclusions they *agreed* to
     - the issues they *agreed* to defer
   - frequently review or summarise
     - key points
     - key decisions
     - progress!

Ten tips for staying out of trouble

5. *Ignorance* is bliss (check your ego at the door)
   - apply “The Principle of Constructive Ignorance”, *especially when you think you know the answer:*
   - “What do you mean by _____ ?”
   - “What is the issue we're discussing?”
   - “Why is ____ a problem?”
   - “Why would you want to ____?”

I'm sorry, but there's just one thing I'm not clear on. Maybe you could help me out.

6. To regain *control*:
   - interject *(nicely)*
   - paraphrase, or ask for a summary
   - *Write it up!*
   - redirect to another participant

My favorite facilitation technique!

Ten tips for staying out of trouble

7. Let *them* do the work

- "Who can answer Wouter's question?"
- "Can someone summarise Dinesh and Johanne's discussion?"
- "Any ideas on how we can prioritise these points?"
- "What should we be looking into next?"
  This reinforces your neutrality

8. Use CoRSE whenever *multiple items* arise

- *Collect* issues/agenda items/points…
- *Reduce* to a relevant and manageable set
- *Sequence* them into the order they will be dealt with
- *Expand* on each point in sequence

Ten tips for staying out of trouble

9. *"Acknowledge what is!"*
   - Don't ignore or sidestep difficulties like disinterest, negativity, or conflict
     - Simply state what you observe – "What I'm hearing is…" or "What I'm seeing is…"
     - Write it up, if appropriate
   - Turn it over to the group for comment

And finally…

10. Don't get down on yourself
    - "I'm here to do a job, not work a miracle."
    - "My job is clearly defined, and so is theirs."

Closing advice

Where new facilitators go wrong

➡ Common problems

- Becoming a spectator – remember, "When in doubt, write it out!" – ***#1 – "Write it up!"***
- Locking in on a few participants – ***#2 – "Scan and ask!"***
- Trying to solve all problems – you can't do facilitation and complex analysis/synthesis at the same time

! Use the group!

- ***Ask*** them! ***All*** of them!
- Give assignments, e.g. –
  - individual "brainwriting"
  - small group synthesis
  - whole group synthesis and consensus
- And always…
  "Write it up and hang it on the wall!"
  - they'll have something to focus on
  - they'll tell you if you got it right.

Patience is a virtue

Two examples I'll illustrate with stories:

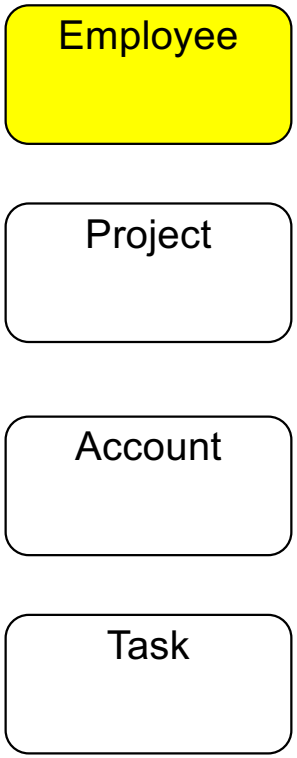
1. Don't rush people into agreeing on an entity definition (the heart of concept modelling.)
   First, establish there are legitimate differences of opinion

2. Don't rush to generalise or create supertypes.
   First, help everyone see the similarities.

Recent student comments -
"I learned modelling should proceed at the pace the group is comfortable with"
and
"Move faster by slowing down"

Entity definition - start by opening minds

*"Can anyone think of examples that might surprise someone else –
that is, anomalies or potential sources of confusion."
E.g., how could we legitimately have different ideas what "Employee" means?*



Starting an Entity definition

"Can anyone think of examples that might surprise someone else – that is, anomalies or potential sources of confusion."
E.g., how could we legitimately have different ideas what "Employee" means?

F/T vs. P/T?

Only IS Department?

Include management, or only individual contributors?

Still in recruitment (an applicant)?

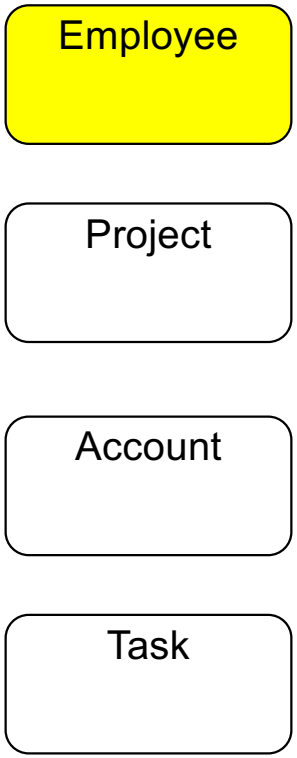
Onboarded? on probation? active? retirees?

Include contractors, student interns, vendor staff, etc.?

Volunteers?

A type of worker (DBA or tester) or a specific person?

A robotic, automated, or AI agent?

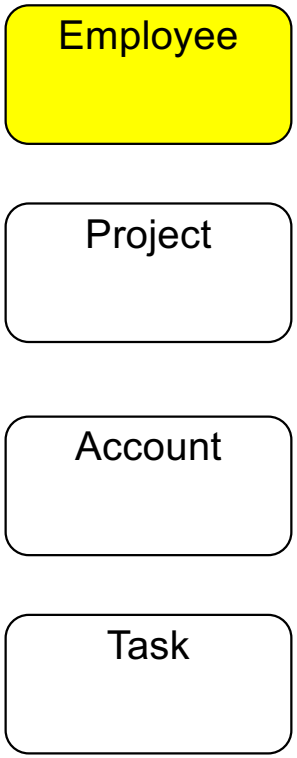


Starting an Entity definition

"Can anyone think of examples that might surprise someone else – that is, anomalies or potential sources of confusion."
E.g., how could we legitimately have different ideas what "Employee" means?

Let's see what the group decided

F/T vs. P/T?	*– Both*
Only IS Department?	*– No*
Include management, or only individual contributors?	*– Yes, everyone*
Still in recruitment (an applicant)?	*– No*
Onboarded? on probation? active? retirees?	*– Yes, all*
Include contractors, student interns, vendor staff, etc.?	*– Yes, all*
Volunteers?	*– Yes*
A type of worker (DBA or tester) or a specific person?	*– No, only a specific person*
A robotic, automated, or AI agent?	*– No, only a real person*



Defining the Entity "~~Employee~~" – "Worker"

Definition format:

1. A description of which real-world things are within in scope, and any specific inclusions ("This *includes*…" or "This *is*...")

2. Illustrate with examples – 5 to 10 sample instances or types

3. Interesting points – anomalies, synonyms, common points of confusion, etc. May include specific exclusions ("This *excludes*…" or "This *is not*...")

Worker (renamed from Employee):

A *Worker* is a person, whether or not directly employed by *the company,* but with some sort of employment contract or arrangement, who has been or may be assigned to a Project.

Worker includes:

- Full or Part-time Employees who have been onboarded, including Probation, Active, Seconded, Suspended, Retired…
- Contractors
- Consultants
- Student Interns
- Vendor Staff Persons
- Company Owners and Managers

Key points:

- "Worker" was chosen as the entity name because it is more generalised than "Employee."
- A Worker may not necessarily be billable on a Project, e.g., a non-chargeable Subject Matter Expert or Volunteer
- Worker excludes:
  - Job Roles, e.g., DBA or Technical Writer
  - Robotic, Automated, or AI Agents (this might change)

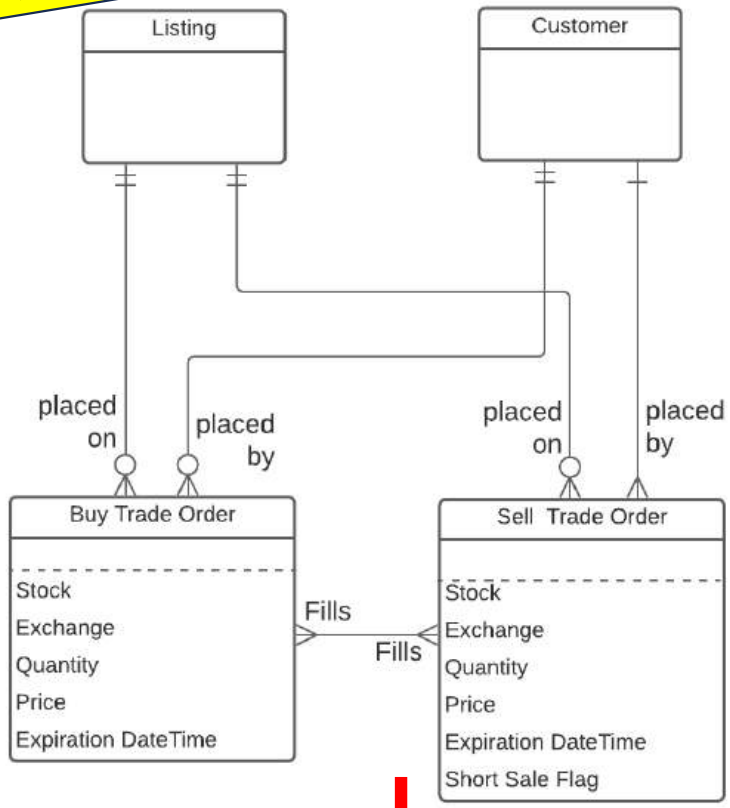
A real example - specifics first, generalisation later

Delaying supertyping / generalisation - a real example

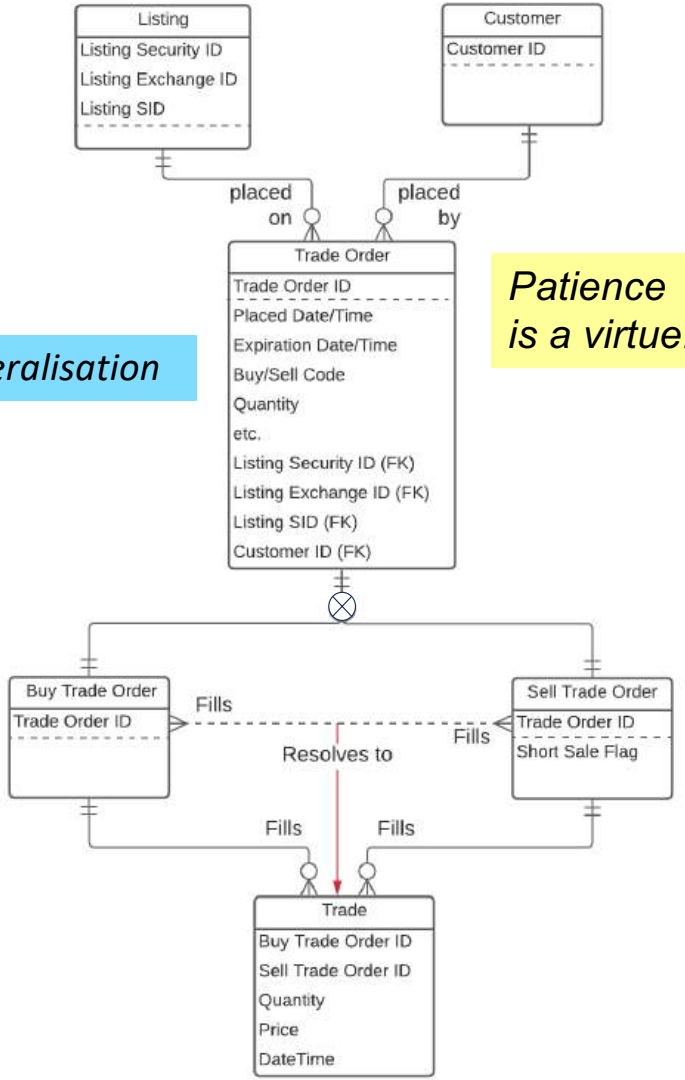
Client:
"Wow! Buy and Sell Trade Orders look very similar!"

Me:
"Omigosh! That's amazing!"

Specifics



Generalisation



Patience is a virtue!

Facipulation

Facilitation

Manipulation

Now, examples demonstrating the value of Concept Modelling

Concept Modelling –
Some notes on the value it provides

And a bit on why
Business Process matters too

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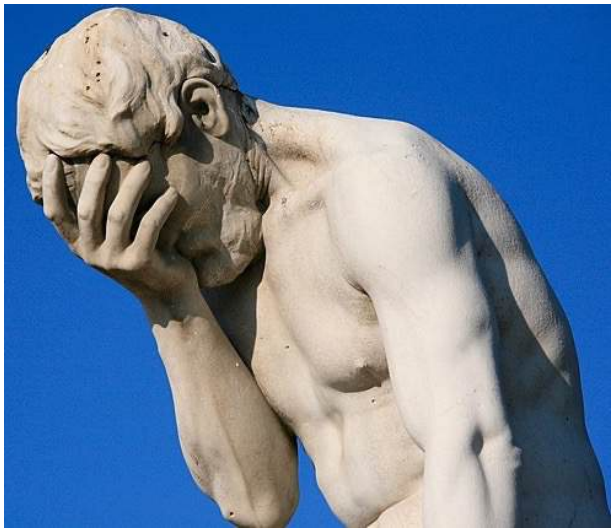
Decades of being warned "Data Modelling is dead!



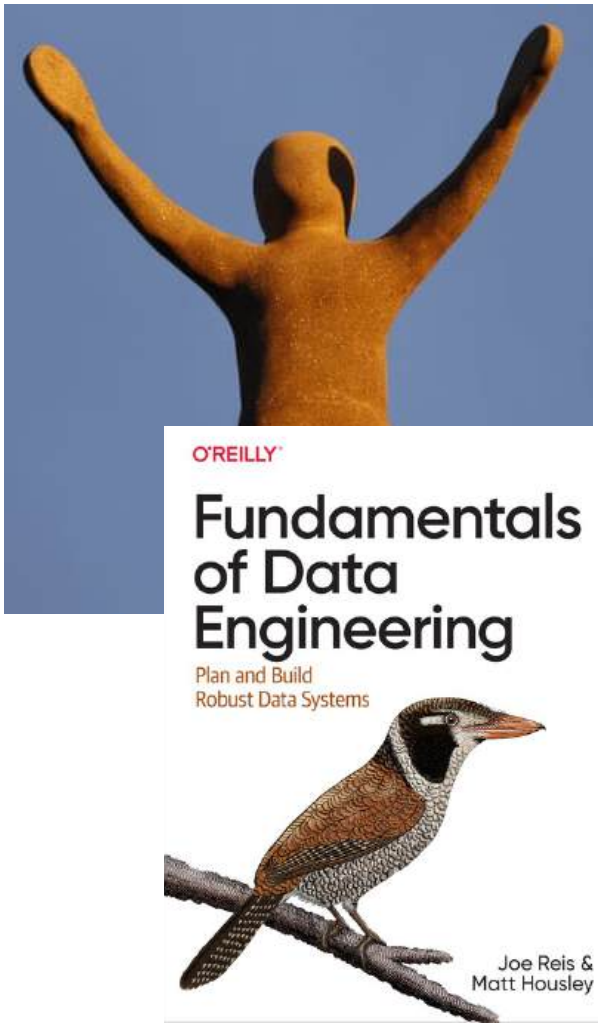
The need seems obvious, but…
"We don't need data modelling because..."

- "We're going Client-Server!" (~1986)
- Agile ("We'll ~~refactor~~ rehacktor as necessary!")
- Packaged software / COTS
  ("The vendor has this all figured out!")
- Big Data and IoT ("It's schema-less!")
- Data Science/Analytics
  ("The algos will discover all the connections!")
- Data Lake, Data Mesh, Data Lakehouse, …
  ("Fill it and they will come!")
- …and many other Silver Bullets that will *Save The Day!*
  (Chat GPT, Gen AI, LLM, …?)

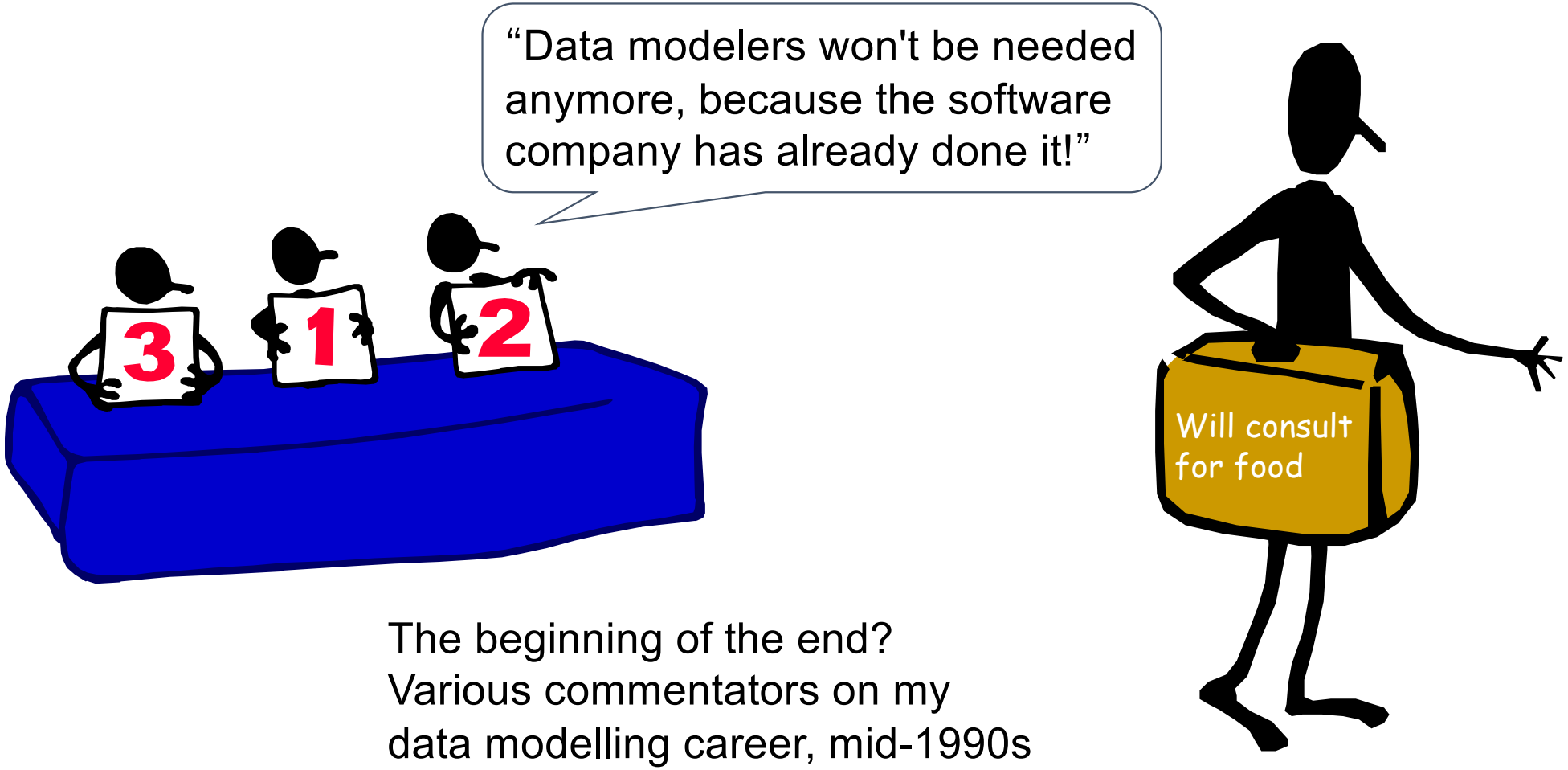
Concept Modelling / Data Modelling – cause for optimism

And then, starting ~ 5 years ago:

- One of the world's largest tech companies asked "Could you build a 'Data Modelling for Data Scientists' class?"
- At a public workshop in NL, a data pro said "We aren't building a Data *Lake*, we're building a Data *Swamp!*"
- At Big Data London 2024 & 2025, Concept Modelling was the hot topic
- Joe Reis, "Mr. Data Engineering," is writing a book on Data Modelling for Data Engineering – *I'll be on his podcast soon.*

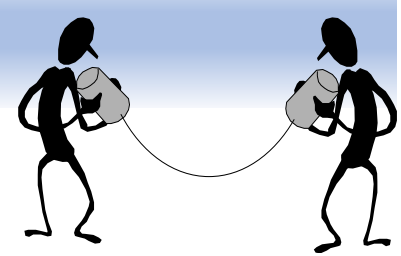


Data modelling – many detractors over the years (but it's where I start!)



The beginning of the end?
Various commentators on my data modelling career, mid-1990s

Redemption, via a SAP implementation



The client...

Could you come on over and do that thing you do?

That entity data stuff with the boxes and lines

We're implementing something called SAP. Our CEO told us to!

When you did this with our Work Order Management system, we all felt we understood our business better than we ever had.

They say it's a terrible idea, a waste of time, and will you *please stay home!*

Alec...

I guess.
What thing in particular?

Oh, data modelling.
Sure - what's the project?

Ah… sounds familiar.
How can I help?

Nice. And what do your SAP consultants say about me coming out?

I'm on my way.

SAP – using DM for ERP configuration

The problem:
- Application selected by decree
- Desire to understand as-is business to map to package and decide on configuration options
- Client felt they were being coerced by integrator

The approach:
- Team of 7 builds 45 entity *concept model* over two days
- Identify "what's good, what's not good" about current model, and revise
- Use this on configuration activities with concept model as an overall map

The key points:
- ***Client-initiated, not IT***
- Now a global showcase account
- Client – "More value from those two days than anything else we did!"
- Me – "I'm not irrelevant!"

Vendor
Country
Plant
Plant Location
Equipment Item & Type
PO, PO Line Item
Req, Req Line Item
Release, Release Line Item
Work Definition, WD Item
etc. etc. etc.

Case study: "Why do we hate this application?"

Evaluation

Client conducts feature-based evaluation of system to track job applicants. SuperApp 1.0 is selected.

Configuration

Client spends >10x the purchase price modifying SuperApp to match their business needs

"Stop me if you've heard this one..."

Realisation

Nobody likes the system, including the federal regulator getting the required info.

Salvation

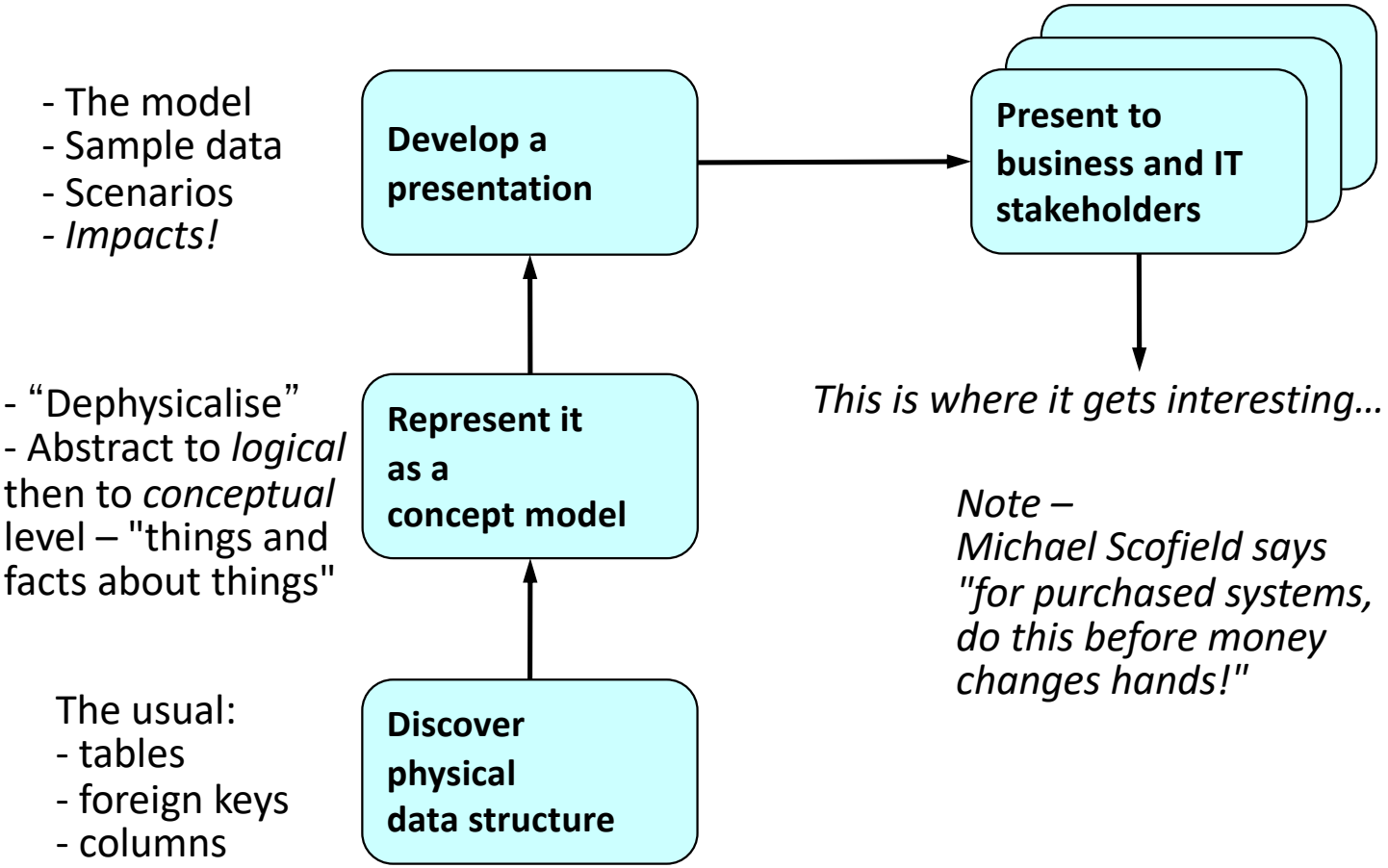
Vendor announces SuperApp 2.0, which has a cool new UX and a host of new features.

Desperation

"If we go to SuperApp 2.0, we'll lose our massive investment in customisation! We need a ~~scapegoat~~!"

A *bald, Canadian* consultant

Overview of a typical reverse-engineering effort



Show the business, possible reactions

"Oh, nooooo…."

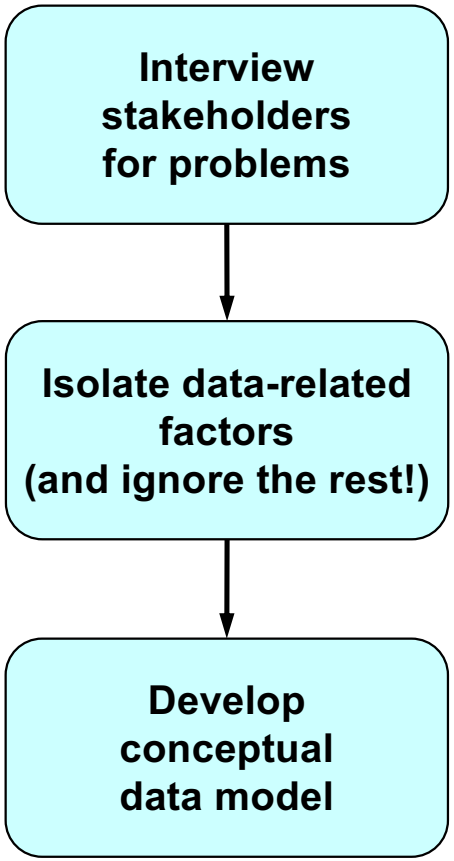
- Horror
- "OMG, now I understand…"
- Glum acceptance,
  sorrow,
  shock & awe…

"Gee, that's swell!"

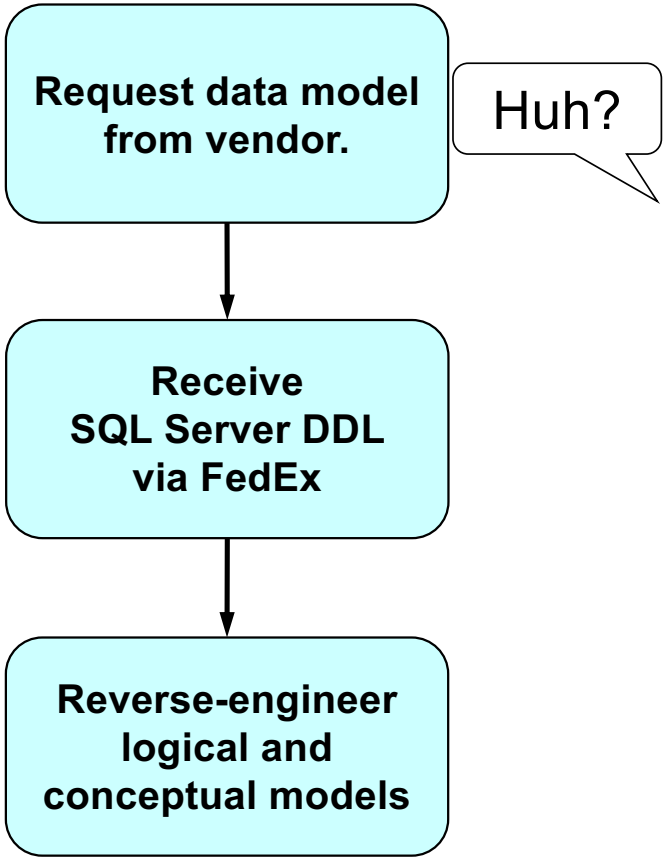
- Retain it – "It's better than we realised!"
  & adapt us – *to it*
- Adapt it – *to us*
- Abandon it

The approach – two parallel streams

Understand the business

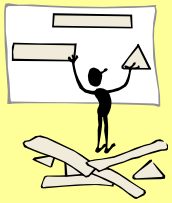


Understand SuperApp



At the presentation…

How you see the world...



Drawn, not projected

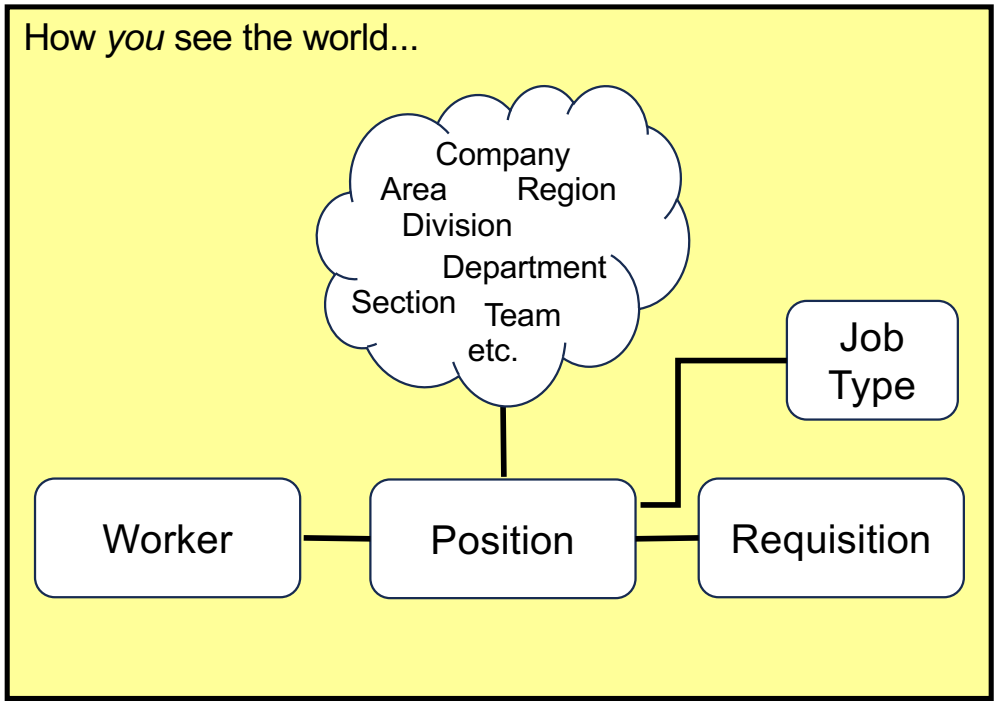
How SuperApp sees the world...

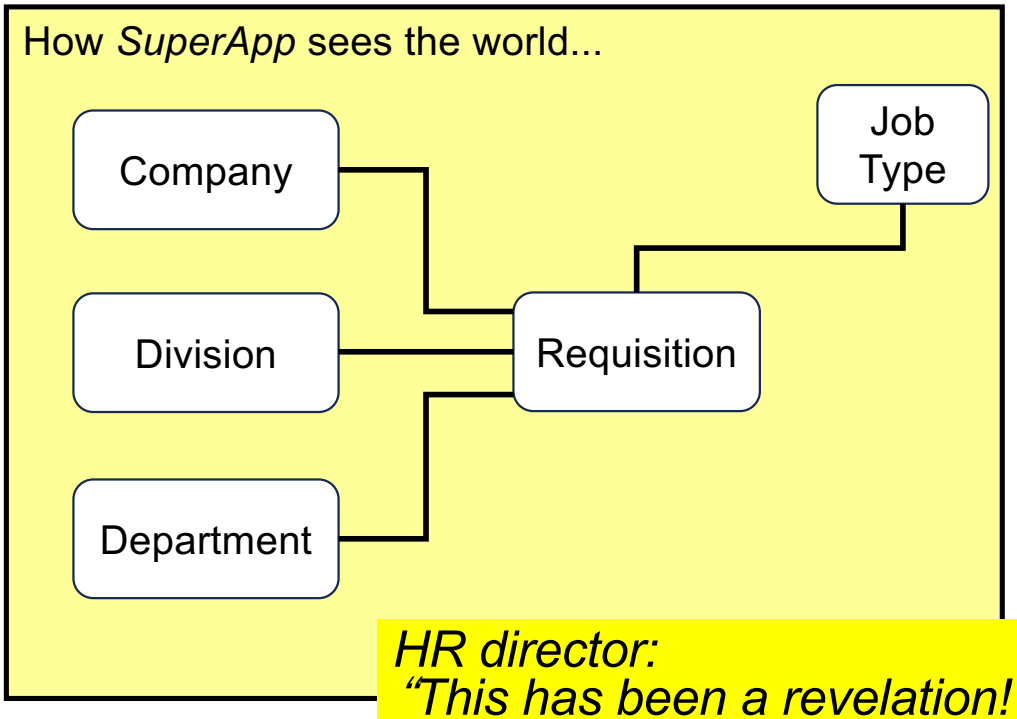
"World view" not "data model"

Training manager: "That's the clearest description of what we do I've ever seen. Can we get that for our orientation material?"

HR director: "This has been a revelation!"

Some of what I showed…





HR director:
"This has been a revelation!"

Your world view:

- Company breaks into Divisions into Department, Sections, Teams, Squads, and so on (there are several types of Organisation Units)
- Each Position contained in exactly one Co, Div, or Dept (or Org Unit)
- Each Position is classified into one "HR approved" Job Type
- Each Position is typically filled by one Worker at a time, but may be more than one at a time
- Each Requisition is for one Position
- ***One Hire per Requisition!***

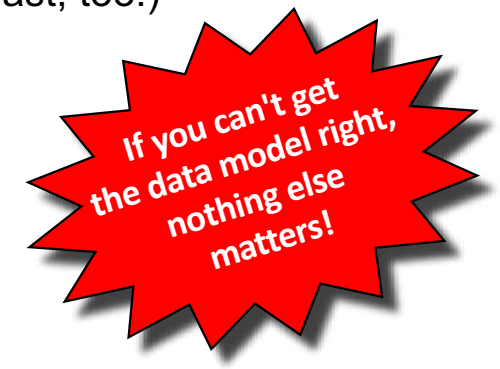
SuperApp's world view:

- Unrelated Co, Div, Dept. (and only those)
- Requisition specifies Co, Div, Dept. (no checking of "parent")
- ***Omigod – that's why so many Requisitions are invalid!***
- Requisition is for a Job Type
- ***No "Position" concept, no limit on Hires per Req.***

Influencing the vendor

The approach for assessing app and negotiating with the vendor:

- Classify issues into 3 tier framework
- Assign severity
- Focus *only* on "High" severity Data Management issues
- Discuss desired changes with vendor (and have a nice weekend on the East Coast, too!)



Vendor chooses to ignore requests. Company name is now owned by two guys in a garage somewhere overseas.

Presentation / Reporting	
Severity	Description
H	
H	
M	
M	
M	
M	
L	
L	
Business Rules / Logic	
Severity	Description
H	
H	
H	
M	
M	
L	
L	
Data Management	
Severity	Description
H	
H	
H	
M	
M	
L	
L	

Retrospective

The senior IT manager involved in this project said "I usually think consultants are a waste of space, but this was great – you really delivered value."

This was a very successful consulting engagement, even though the outcome was abandoning SuperApp.

Without my involvement,
they would never have considered inspecting the underlying data models.

Example: If you ignore the process and the data…

U.S. University implementing cloud-based Human Resources and Payroll systems from *the same vendor.*

- Total spend US$80M, nothing salvageable
- University leadership unamused
- I was brought in for “project recovery”

Project recovery

My assignment –
take a large team through a process model and data model-based approach –
run 4-day offsite in “The Capsule”
(we felt like astronauts)

A "Futuro" house by
Finnish architect Matti Suuronen

What we learned:

- Little time on “business process”
  - very generic / unrecognisable as “what we do”
  - team tires of this
- Zero time on “data” (no “concept model”)
- Management: "Get on with it – the vendor has seen it all before."
- 100+ programmers begin detailed configuration of *application rules and logic – “Straight to task.”*

Initial focus – too much on "requirements"

Over 100 developers coded detailed business rules and contract terms *separately* into

- Payroll Application
- HR Application

Note: university had over 35 labour unions with complex payroll and benefits policies/rules – ***no rethinking whatsoever!***

Remediation – focus on process and data

Identified, modelled, analysed, redesigned significant process – “Recruit, Hire, and Onboard Employee," the Case was "Tenure-Track Faculty”

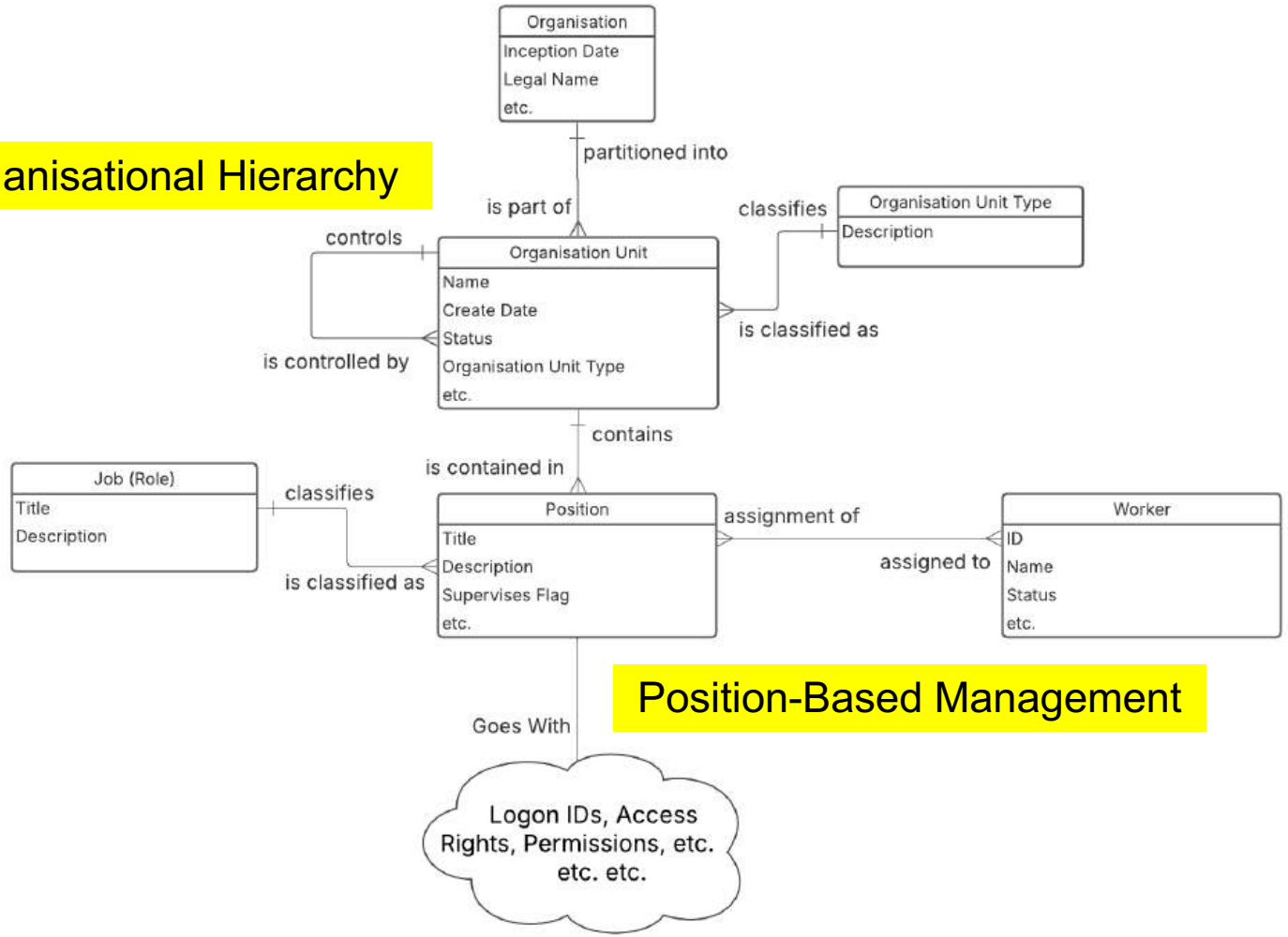
- Developed *scope model* (invaluable!)
- Developed augmented scope model
- Assessed and redesigned based on “what”
- Added “who & how” to create a to-be *augmented scope model*

Modelled seven critical concepts in data – “what do we mean by…”

- Supervisory-Organisational Hierarchy
- Position-Based Management
- Visible Application Workflow
- etc.

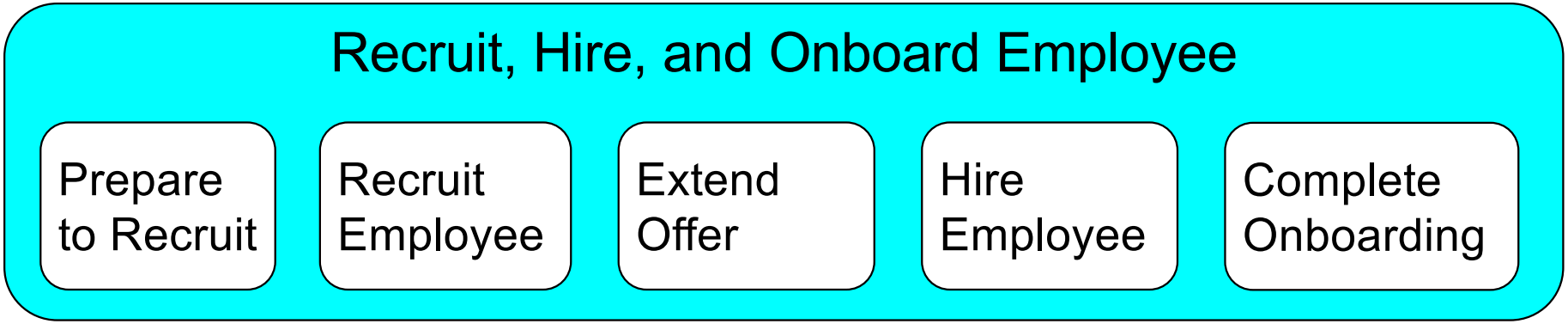
Concept Modelling was <u>really</u> important

Supervisory-Organisational Hierarchy



Position-Based Management

Identify main phases in a Scope Model



Augmented Scope Model ("what") for the full process

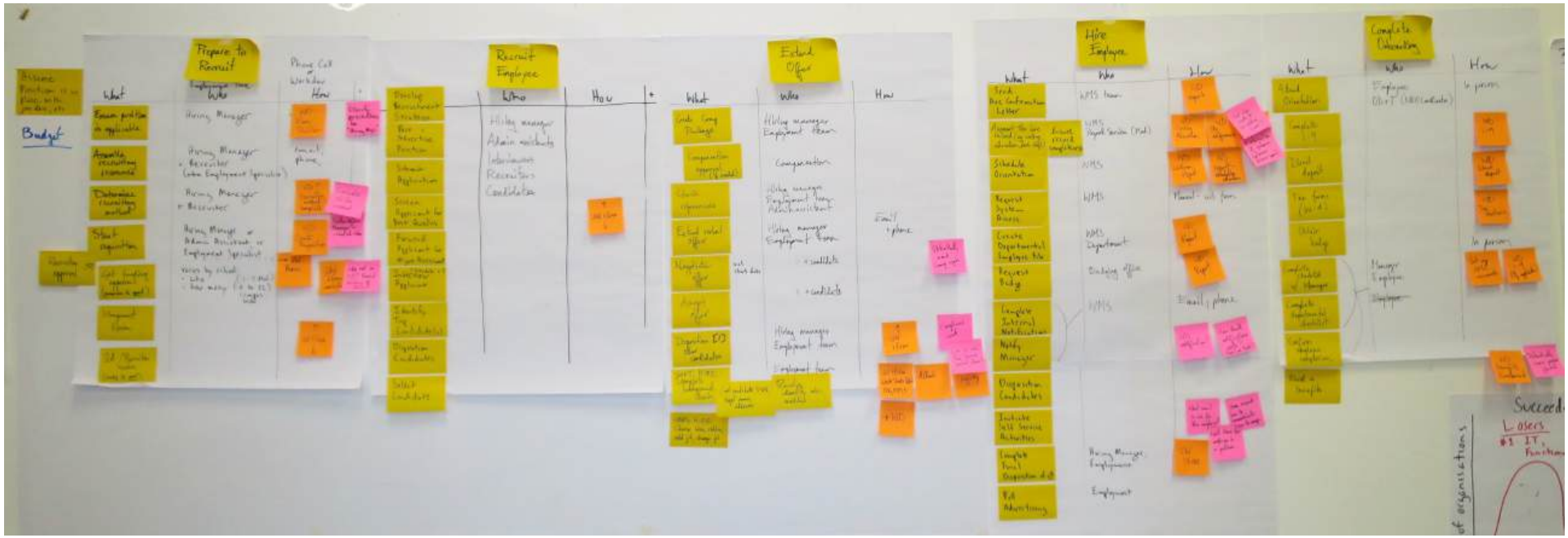
Recruit, Hire, and Onboard Employee

- *Identify* Payroll Title & Job Title
- *Develop* Job Description
- *Obtain* Funding, Compensation, & Space Approvals
- *Identify* Supervising Manager
- *Determine* Recruiting Method
- *Assemble* Recruiting Resources (e.g., search committee)

Active verbs & nouns

- *For the first time,* the entire end-to-end process is visible
- A surprise to *everyone* how much work it is, and *how many functions participate!*
- Still no reference to “who or how,” just "what" – *active verb* + noun
- *This is critical to build support for change – it “depersonalises” in a good way!*

Add "who and how"



Next, add “who” (which role) and
“how” (which tool or system function) and "notes."
Now we have the basics of a to-be process design, and *an understanding of which steps will be supported by which system functions – great for understanding if the COTS app will actually work!*

Bottom-up Concept Modelling with top-level executives

Client: mid-size credit union (a *"member-owned bank"*) in US southwest

- BI team wants to improve modelling of complex *operational* data – schedule in-house delivery of our *Business-Oriented Data Modelling Masterclass*
- BI team invites Chief Strategy Officer (CSO) to attend Day 1
- In-class example shows how important terms and definitions are
- The example – one of the world's largest credit card issuers responds to competitor's goals.
- *CSO is impressed!*

"What is a Customer?" at the credit card issuer

Competitor: "We will have 1 billion customers by the year ____."

Credit Card Issuer CEO (Famously aggressive and competitive): *"We'll have more!"*

- CEO, later: "But how many Customers do we have *now*?"
- IT folks try to answer the question by counting Customers
- Answers start coming in – varying by *orders of magnitude!*
- CEO was unimpressed:
  "IT, you have a $330M annual budget
  and you can't tell me how many Customers we have?!"
- IT (bravely) pushes back –
  "It's not an *IT* problem, it's a *business* problem.
  There's no definition of *a Customer.*"
- **Note** – CEO was impressed by the pushback and the first Data Resource Management group was formed
- The exercise – what were people counting?

Counting customers

Corporation/ Enterprise

Corporate Account

Statuses (active, inactive, …)

Card

Person

Using a
Name & Address match
– good luck with that!

Account-holder

Personal Account

Cardholder

Merchant

Imprint Machine / PINpad

CSO, to Steve, the BI lead: "Hey, Steve, do we know how many *Members* we have?"

Steve: "Not even close…"

CSO: "We need to get the Leadership Team together and do some of this stuff."

Preparation –

- Schedule three sessions, Mon-Tue-Wed, 08:30 – 14:30. *Not Full Days!!!*
- *Virtual* first, *in-person* later
- Via email, we gave a "homework assignment"
  - Please spend ~10 minutes listing terms you use daily.
  - Please identify information you need but can't get, or don't trust it
  - No right or wrong – goal is familiarity with your terminology
- The text of our email…

Before the session, it would be very helpful if everyone could do two things:

- Spend up to 10 minutes or so listing any terms that come to mind that you use on a frequent basis. Each item in your list could be the name of something you need to track, a fact about a thing, a spreadsheet, a report, a metric, a system, a database, or anything else that comes to mind. I'm hoping everyone can list thirty or forty things. There is no "right or wrong" – this helps me learn the language and provides clues to what the most critical terms might be.
- Think of one to three examples of information you'd like to be able to get, but either you can't, or you're not sure how accurate it is. For instance, at a US university last week, a Vice-Provost said she would like to know "How many non-resident, tenure-track Faculty do we have." Of course, this means agreeing what is meant by "Faculty," "tenure-track," and "non-resident." (I've done a LOT of work in higher education and can promise you there is not agreement on what those terms mean.)

That's the whole point of our sessions next week. :-)

Some had little to say, others had lots

- What do we consider a Member in reporting?
- What do we consider an Account in reporting?
- How do we determine how many members we have? Is it based on number of individual memberships or unique SSN?

General Terms

- Member
- Membership
- Individual
- Account
- Services
- Co-borrower
- Primary
- Joint
- Pay off
- FIS (Clientlink)
- Co – op (Springboard)
- DMI
- Past due
- Total due

Member Solutions Terms

- Carmpro (collections system)
- ARM (recovery system in Carmpro)
- Promise to Pay (PTP)
- Payment by interval i.e by hour or day
- Call by interval i.e. by hour or day
- Balances saved by interval i.e by hour or day
- Charge off
- Repossession
- Penny loan
- Workout loan
- Fixed Payment Plan
- Loan Extension
- Bankruptcy by chapter 7,11,13
- Delinquency
- Delinquency rate
- 60 day + delinquency rate
- Charge off rate
- Net Charge off rate
- Recovery
- Recovery rate
- Forced closed
- Lexis nexis
- Credit bureau /credit report
- Skip tracing
- Net flow rate
- Leading edge rate
- Roll rate

All were useful

Terms:

- Household income
- Member growth
- Loan originations per member
- Average relationship balance
- Average relationship account
- Fee income per member
- Net income per member
- Marketing expense per member
- Member trends
- Market segmentation
- Mobile/Online banking penetration
- Member investment products
- Member retirement products
- Lending market overview (credit card, mortgage, auto, home equity)
- Benchmarking
- Payment information (how cards are used)

I went through all the "homework" and selected ~40 terms that qualified as "things"
(or entities, or business objects, or classes, or…)

Examples:

- Product/Service adoption based on campaigns
- Track acceptance rates on promotions
- Tracking the new member sales path (similar to what we are doing with the organic growth project)

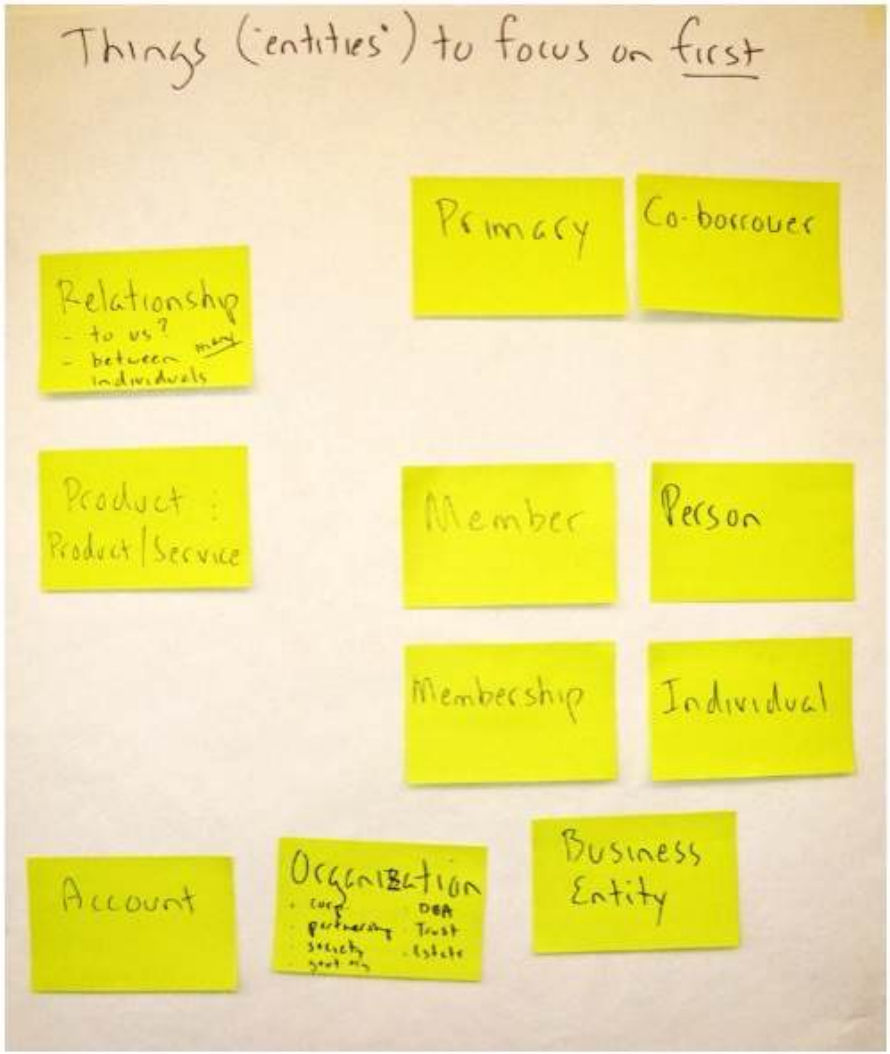
Present 40 potential "things" from "homework"

More than enough to work with – here are 30:

They added more…

"Wow – you actually *did something* with our homework!"

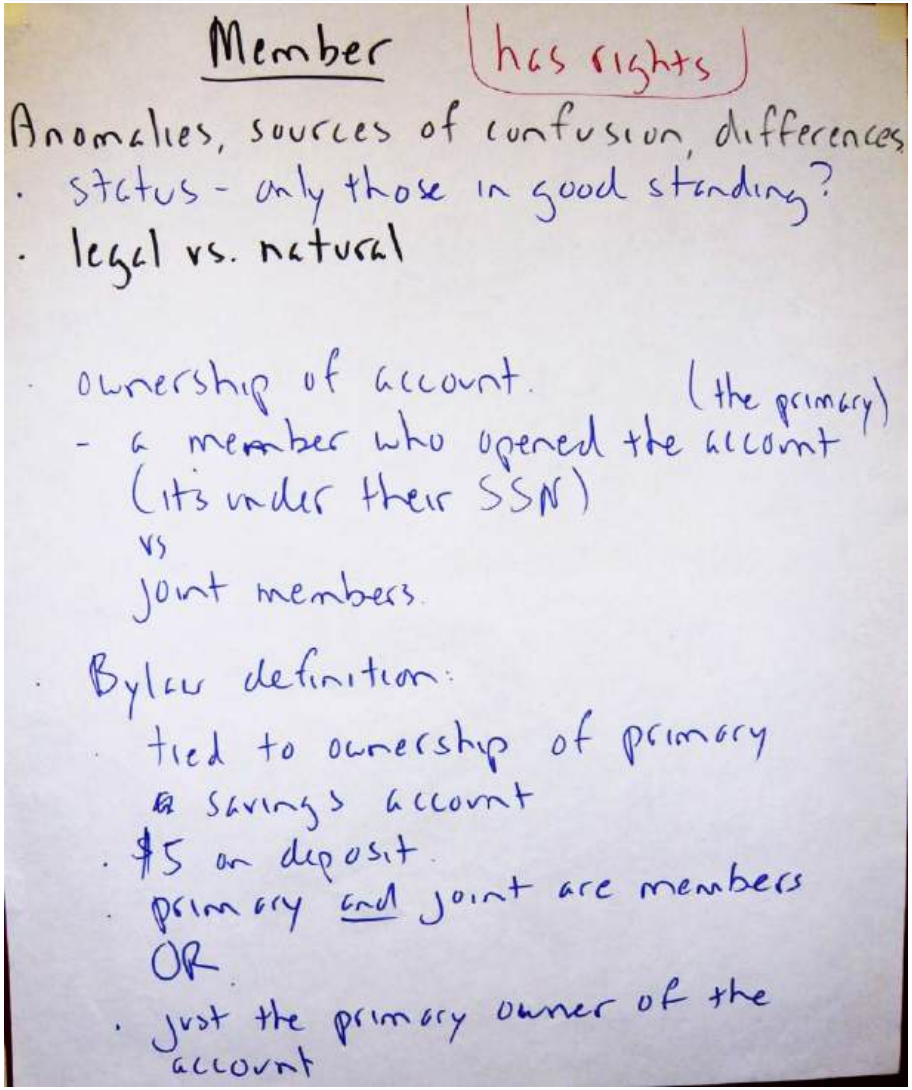
And now we have a plan!

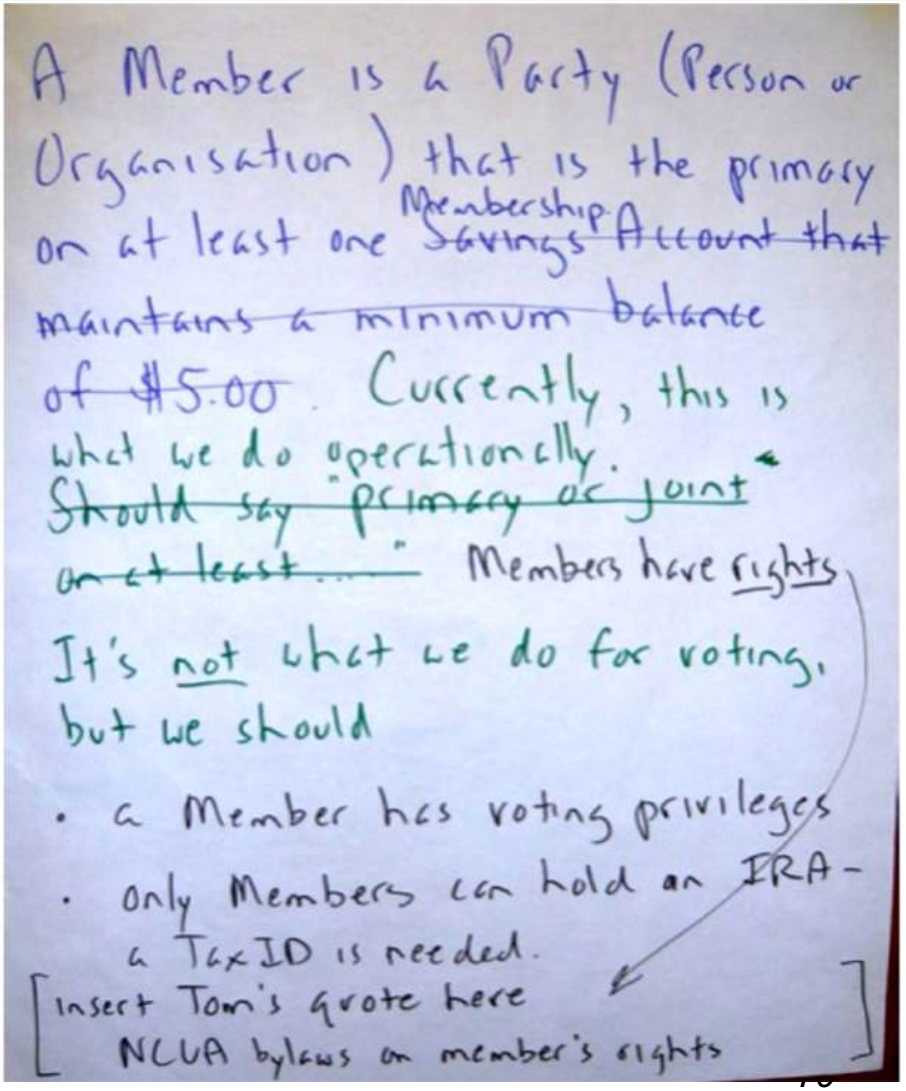


They decided
on Monday we will focus on –

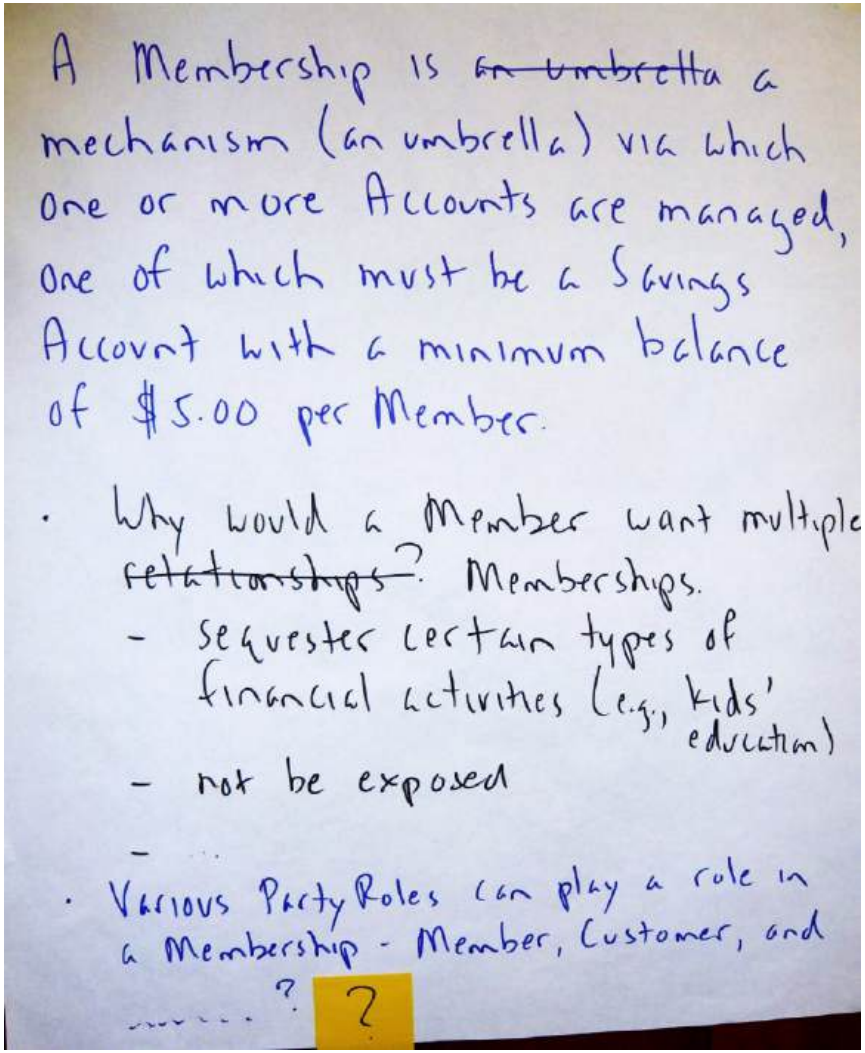
- Member
- Membership
- Person
- Individual
- Account
- Organisation
- Business Entity
- Primary
- Co-Borrower
- Relationship
- Product
- Product/Service

1 – building a "Member" definition…

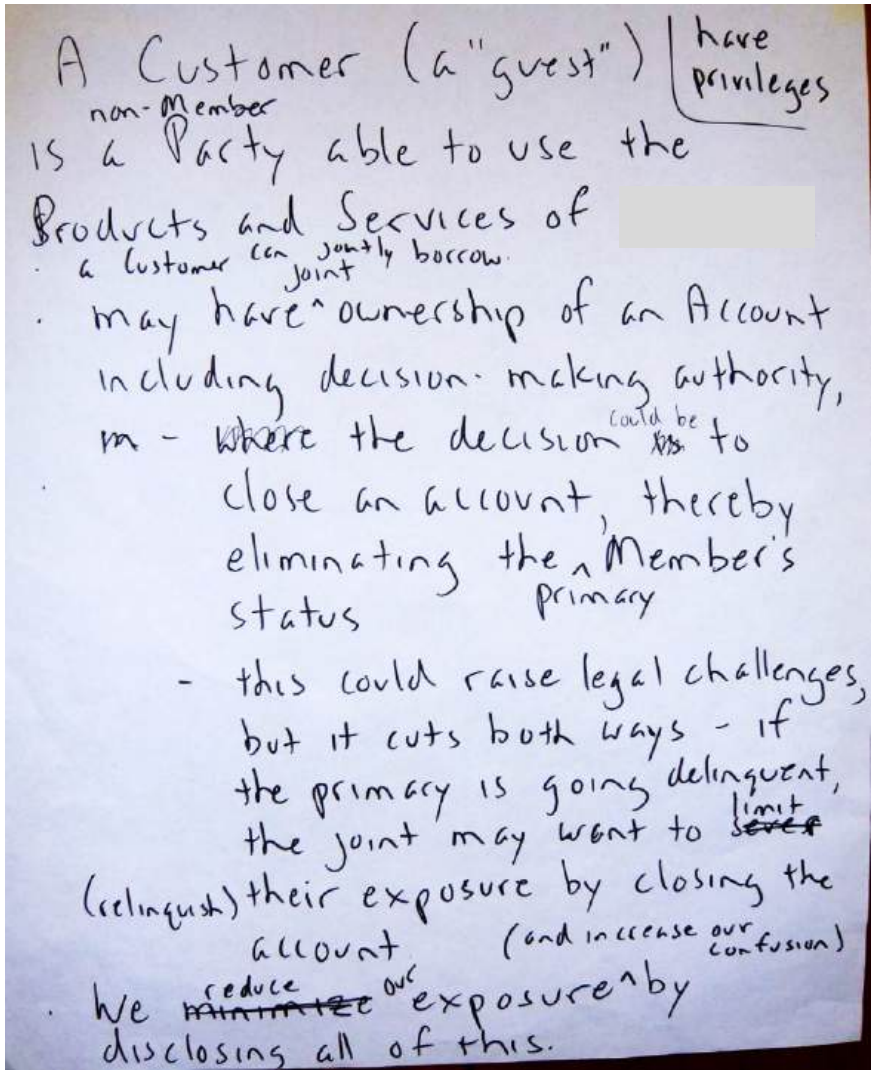




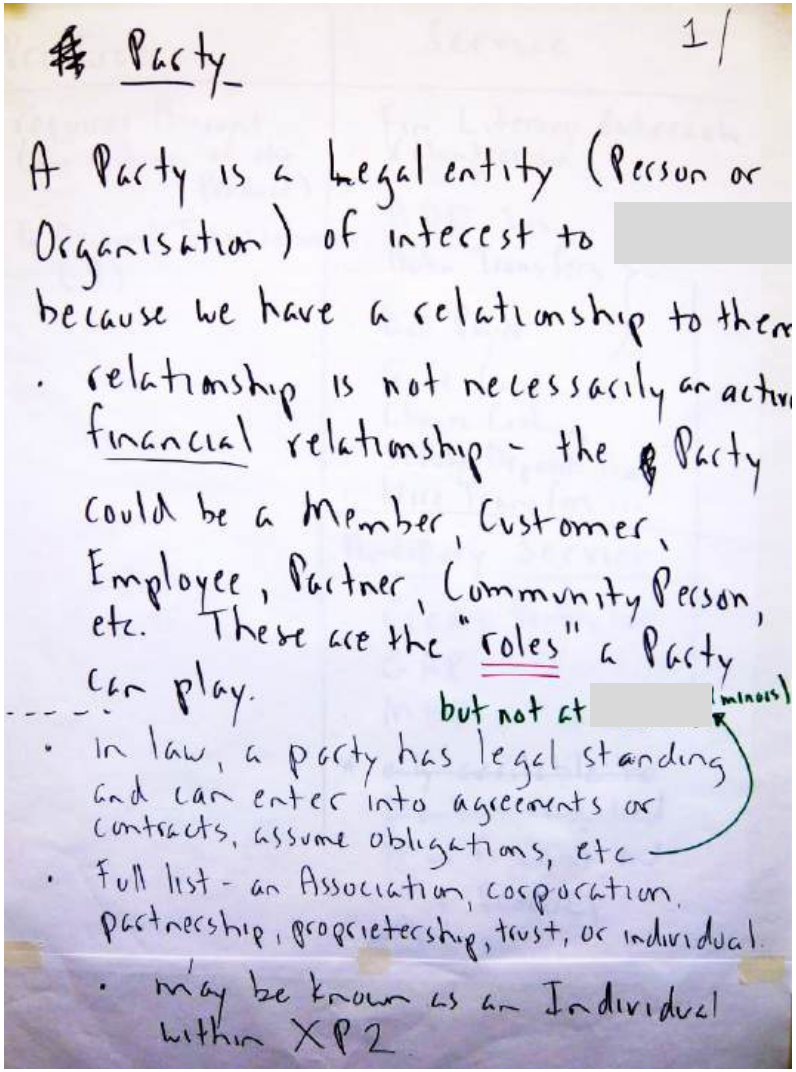
… which is different than "Membership"



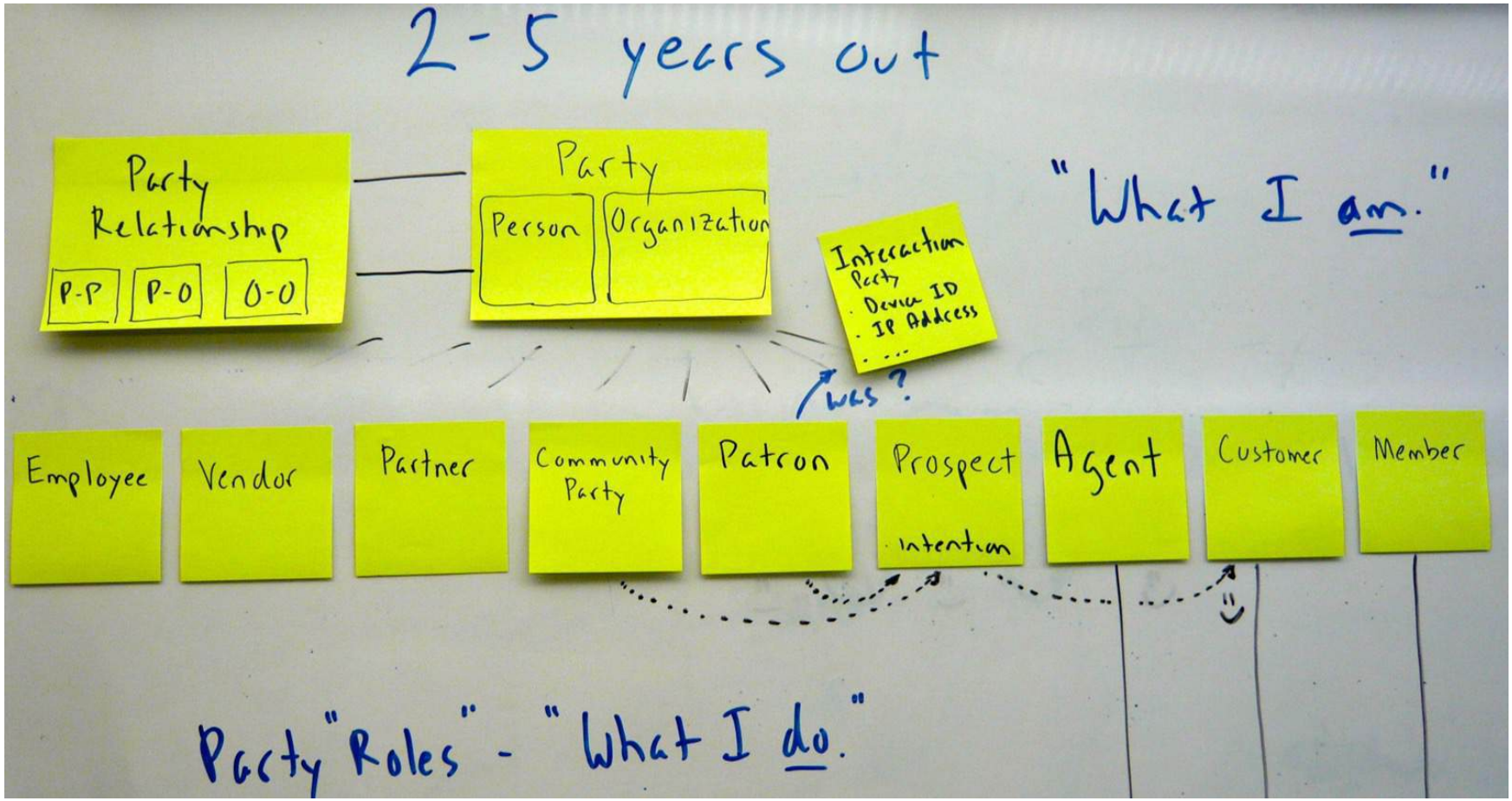
… which is different than "Customer"



… which is different than "Party"



Parties and Roles



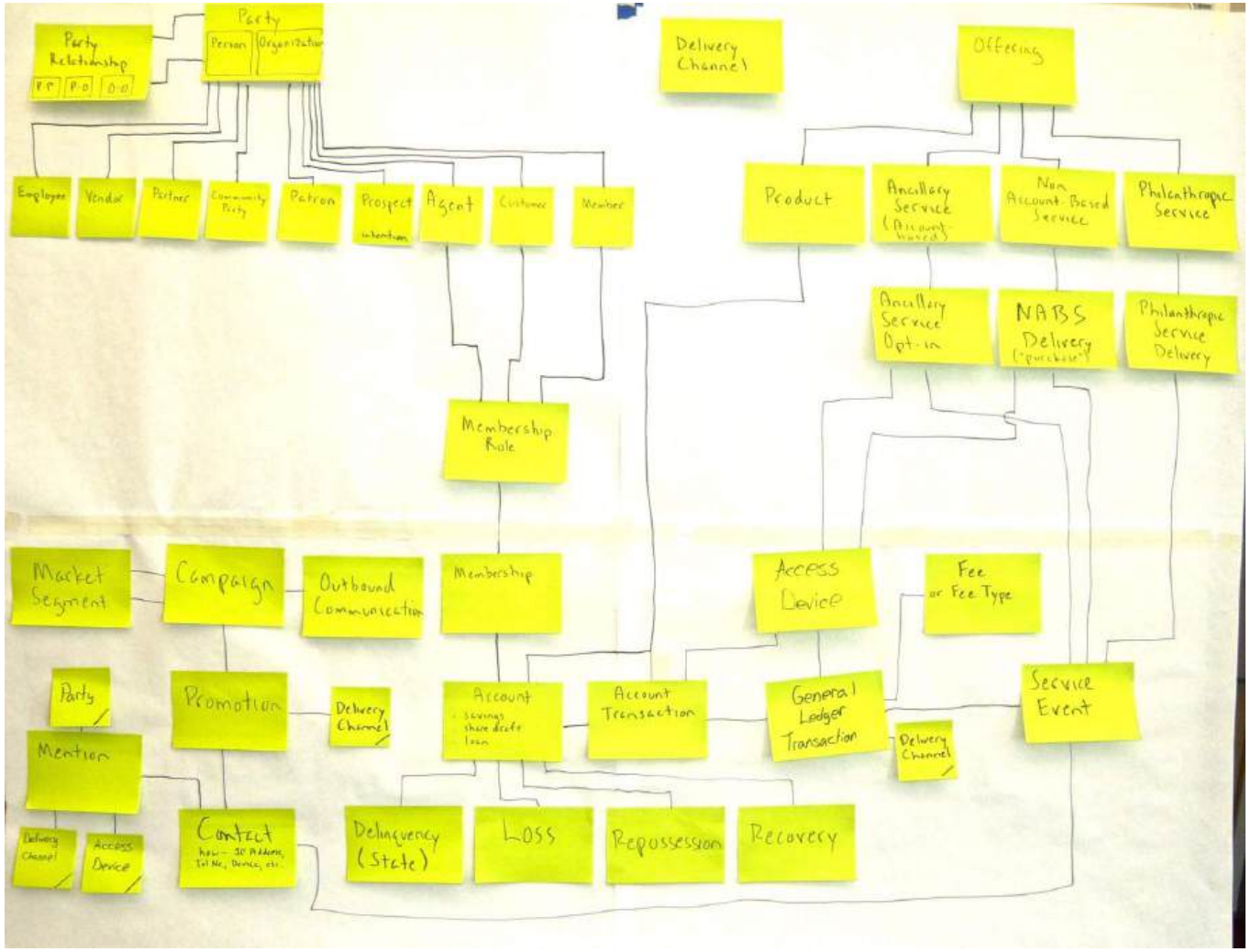
Day One Done!


Things ("entities") to focus on first
Primary
Co-borrower (Customer on a Loan)
Relationship
- to us?
- between many individuals
Business Entity
Product : Product/Service
Done
Member
Individual
Person
Select Employer
Employer
Membership
Organization
Select Employer Group
Account
Select Employer Group
We dealt with these!
Employee

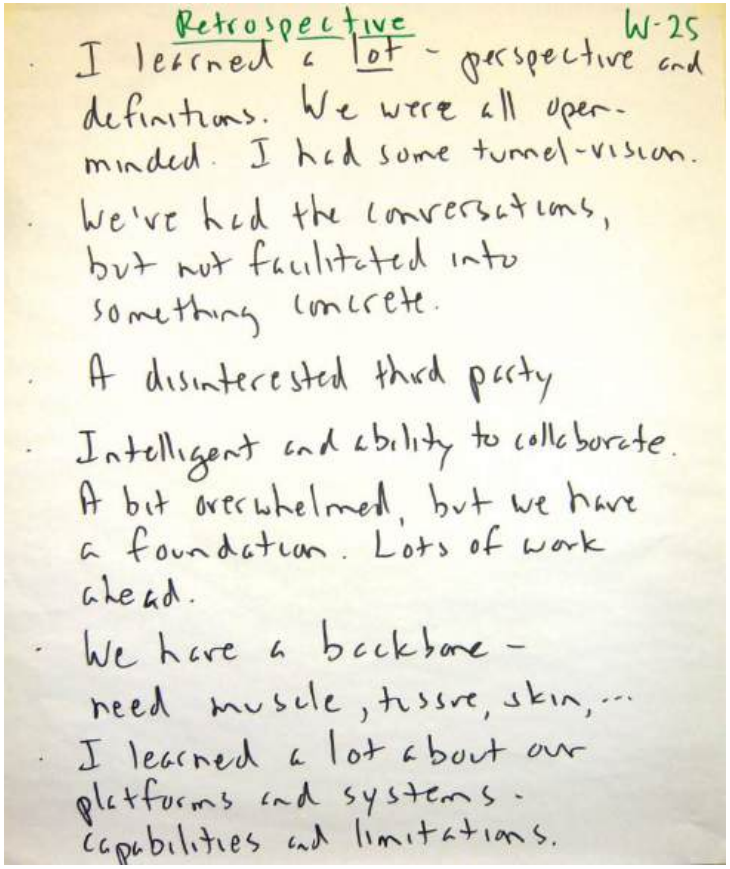
Three partial days, and a ~40 entity concept model emerges

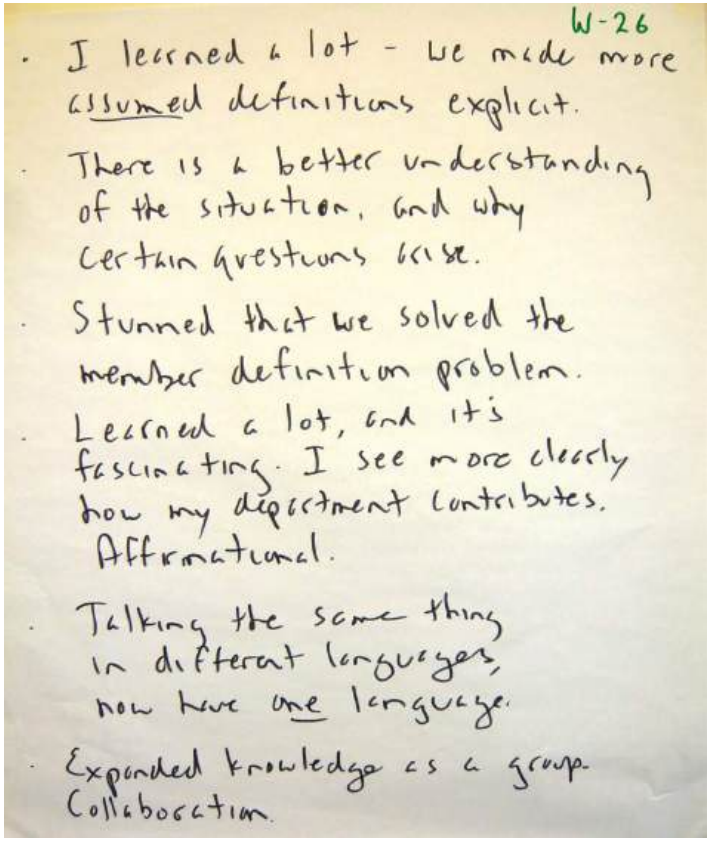
Plus…

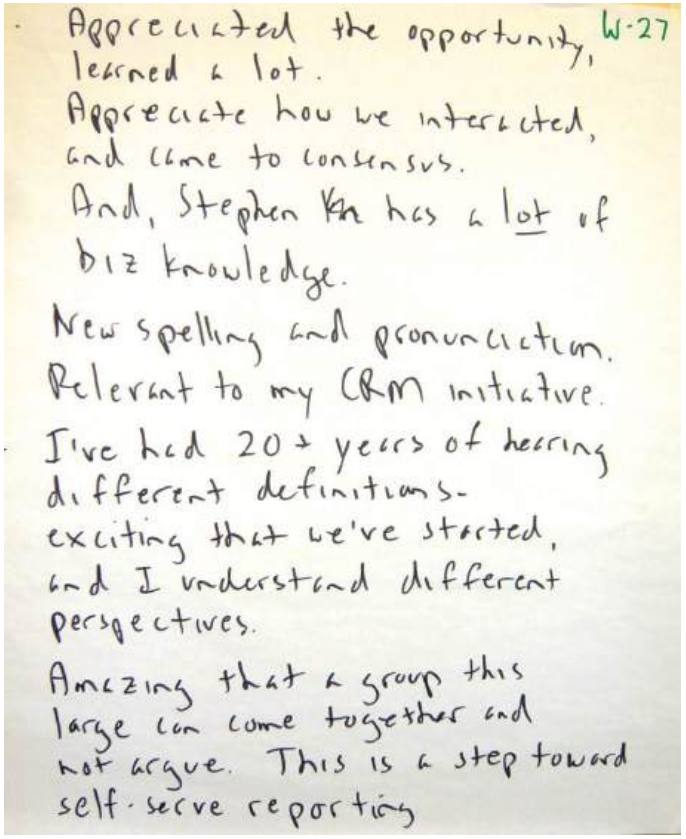
- Over 50 flipcharts of notes – issues, goals, decisions, etc.
- Definitions for all entities
- *Very* positive feedback



They were very pleased with the outcome…





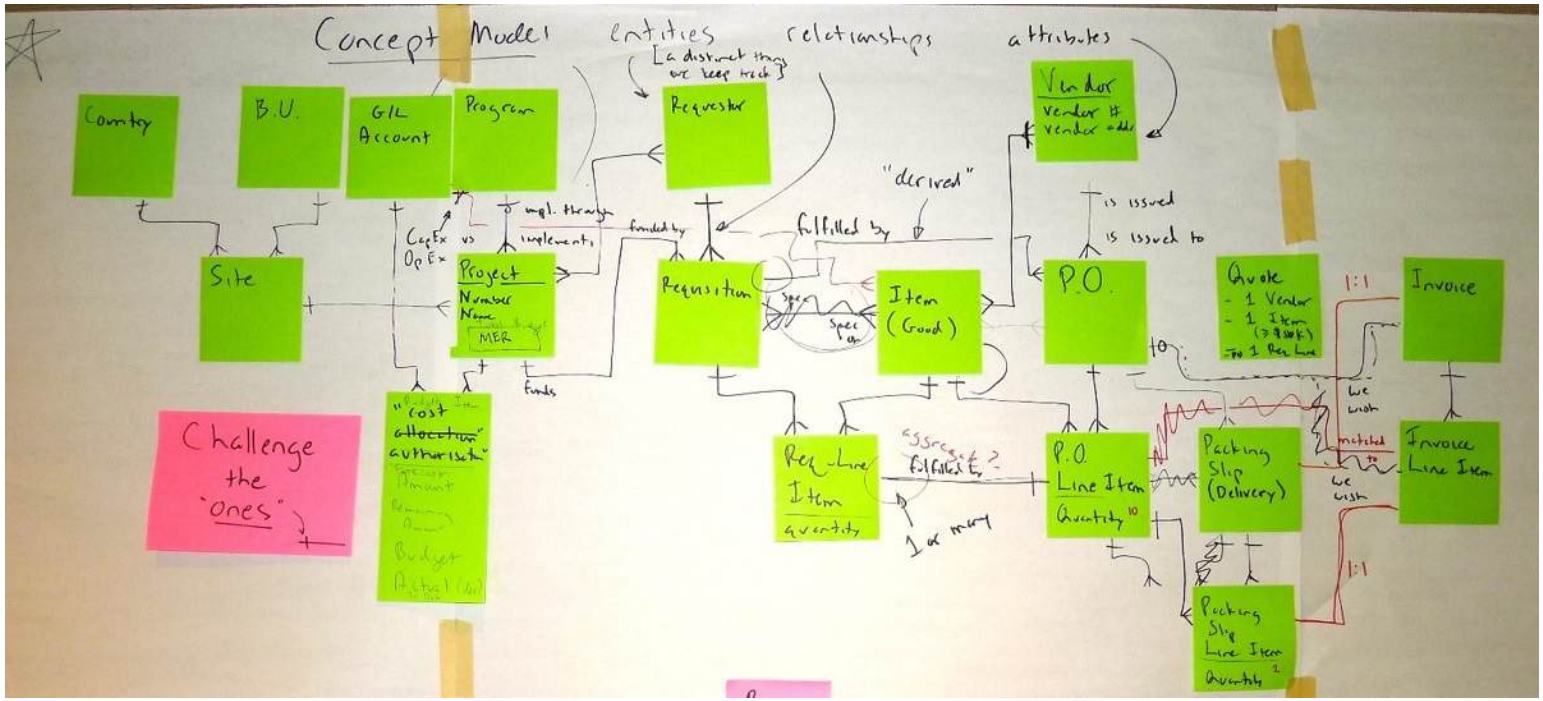


Plus… COO - "We should have done this 20 years ago."

Another example – Concept Model shows possibility of major process change

Global mining company hires me to help with Business Process in support of ERP changeover.

I "snuck in" some quick, informal Concept Modelling.



This highlighted many areas lacking clarity:

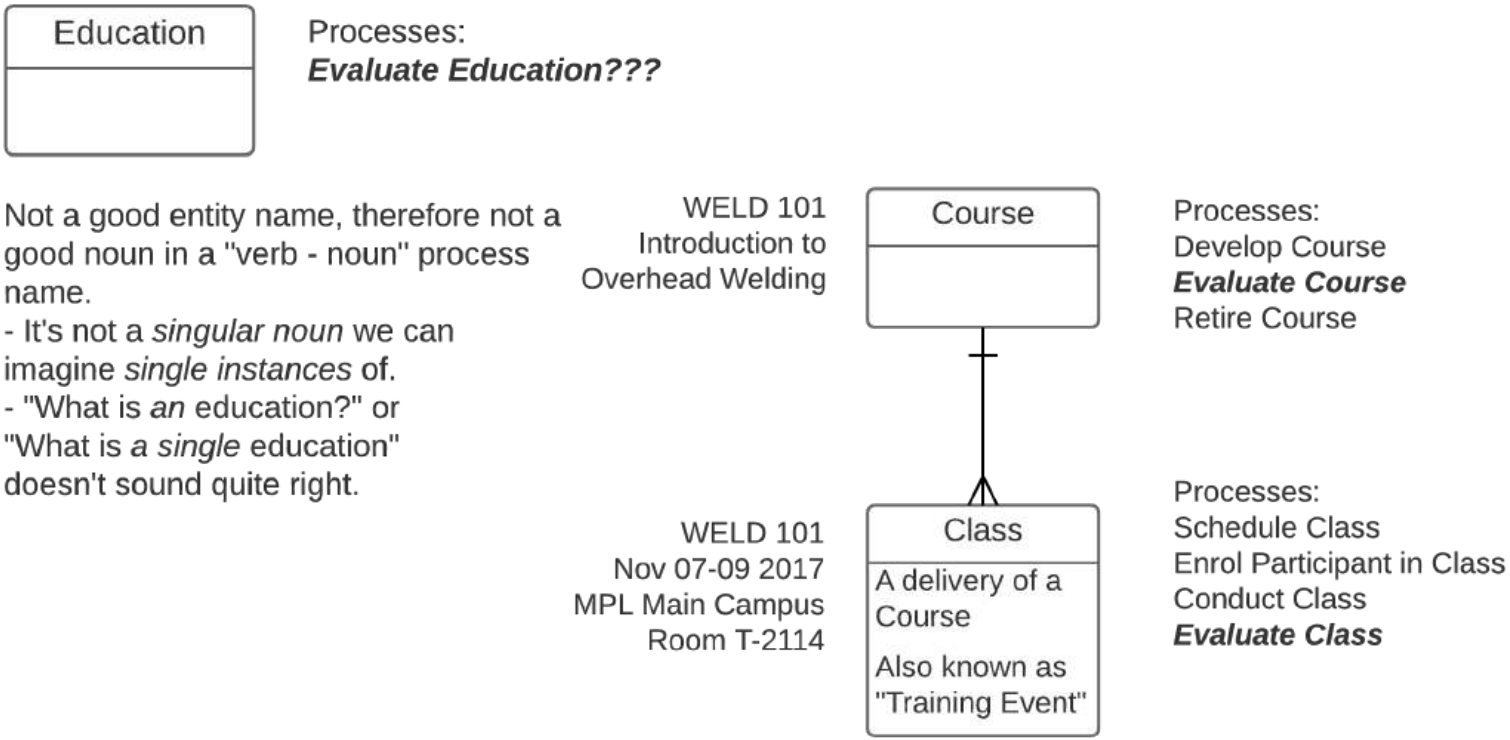
- Program vs. Project
- Site vs. BU Location vs. Country
- Requisition vs. Quote vs. Purchase Order
- The 1:1 relationships among PO/PO Line Item, Packing Slip/Packing Slip Item, and Invoice/Invoice Line Item showed that Invoiceless Payment, a major process change, was possible

I did not use any data modelling terminology until the end!

A simple example – Concept Modelling to clarify the process

Analyst struggles to model “Evaluate Education” – timing disconnects, 1:M and M:1 connections within the process, token changes, …

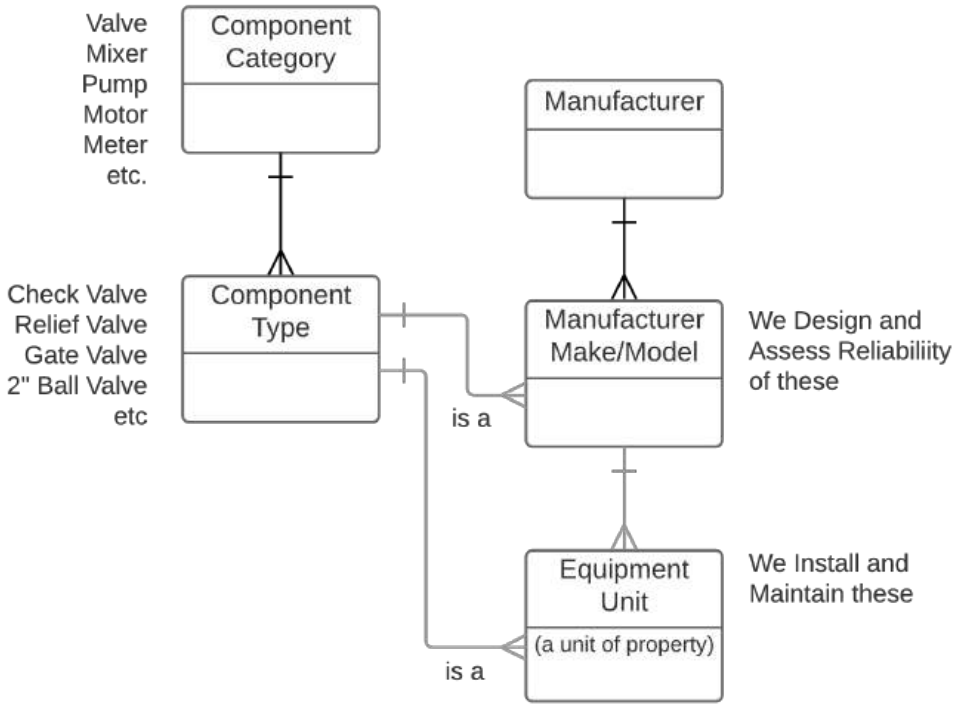
A few minutes of Concept Modelling showed two distinct tokens and processes. “Education” was a “mushy noun.”



Another simple example– Concept Modelling to clarify the process

A session to model the “Design Component” process at a pipeline operator is going in circles. Concept Modelling clarifies the company doesn't actually “design components,” they:

- Develop Component Type Specifications
- Approve Manufacturer Make/Model (“AML”)



A more complex example – is a new process concept viable?

Classroom tech support at major US research university

- Goal: "Uber-style" tech support for classrooms –
  when an Incident is raised in a Classroom,
  dispatch it to one or more appropriate Techs
  (qualified, available, assigned to the appropriate Support Unit)
  who will bid on it.
- Approximately 20 "assertions" described the planned state:
  - Each Tech may be badged for one or more Service Category Levels, and for each Service Category Level there may be one or more Badged Techs.
  - Each Tech may be assigned to one or more Support Units during a given time period,
    and for each Support Unit there may be one or more assigned Techs.
    A Tech can only be assigned to one Support Unit at a time.
  - An Incident for a particular Classroom can be raised by
    either a Customer (the "reporter" – Faculty, Staff, Tech, …?)
    or an automated Alert raised by an Equipment Unit located in a particular GP Classroom.
  - many more…
- The assertions led to the development of an ERD.
  Note – the complete "Concept Model"
  is the combination of the definitions, the assertions, and the graphic (ERD)

Example 5 – Assertions. Lots of assertions.

Classroom Support

Assertions, for review and validation:

- Support is provided by different Support Units (organizations) for different Service Levels (tiers) and different Service Categories (Computers, Audio-Visual, Learning Technologies, Networking, Scheduling, and Facilities.) We are concerned with support for Computers, Audio-Visual, Learning Technologies, and Networks. Scheduling is supported by the Registrar's Office, and Facilities is supported by (shockingly) Facilities.
  If we only cared about one Service Category, say "Computers," there would be no need to model the "Support Category / Support Unit" concept, because it would be a given – there would only be one.
- Each Support Unit could support one or more Service Categories. E.g., Sam's Call Center provides Tier 1 support for Computers, Audio-Visual, Learning Technologies, and Networking.
- Support for Department-owned rooms is not within the scope of this initiative; support will be provided by the owning Department's Local Support Unit.
- Support for Classrooms (GPC and non-GPCs) or a Room Block of GPCs will be provided by a Support Unit during a Time Block for a Support Level (Tier.) That is, for a given Room Block (available via the Classroom reporting the Incident) for a given Service Category Level (e.g., Computers – Tier 1) during a particular Time Block, a particular Support Unit will provide support. This concept is represented via the "Support Responsibility" concept, an associative entity which indicates the responsibility of a Support Unit to provide support for a Service Category Level for a Room Block during a Time Block. There are three general possibilities:
  1. Support for the Room Block will be provided exclusively by the Local Support Unit (the Department);
     - this only applies to non-General Purpose Classrooms (Department "owned")
  2. Support for the Room Block will be provided exclusively by the Central Support Unit;
     - Will this happen? Is this a goal?
  3. Support for the Room Block) will be provided by the Local Support Unit during "normal business hours" (a Time Block) and by the Central Support Unit outside of "normal business hours."

Classroom Support

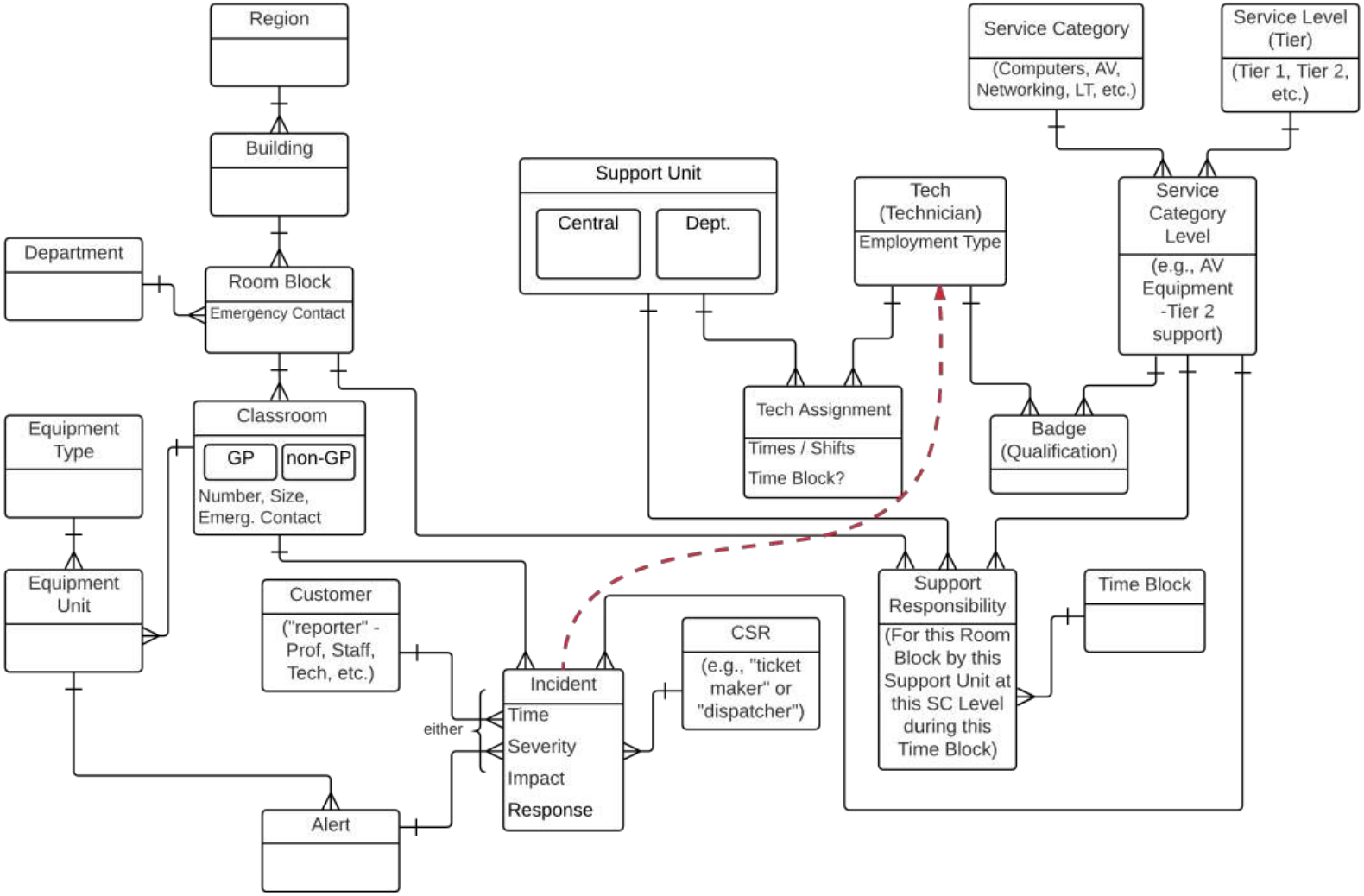
     - Is this the "normal" case?
     - Should it read "after normal business hours?" That is, will Central ever provide support both before and after normal business hours?
- Each Tech may be badged for one or more Service Category Levels, and for each Service Category Level there may be one or more Badged Techs. A M:M relationship.
- Each Tech may be assigned to one or more Support Units during a given time period, and for each Support Unit there may be one or more assigned Techs. A M:M relationship, but will a constraint be that a Tech can only be assigned to one Support Unit at a time?
- An Incident for a particular GP Classroom can be raised by either a Customer (the "reporter" – Faculty, Staff, Tech, …?) or an automated Alert raised by a an Equipment Unit located on a particular GP Classroom.
- The "dispatcher" or "CSR" at Room Support (?) assigns (or routes?) an Incident to the appropriate Support Unit based on the Support Responsibility.

Putting all this to work…

The goal is to automatically route an Incident to one or more Techs. When an Incident is raised, Dispatch will always create a Ticket, and then route it to the appropriate Tech(s) based on Service Category Level (Service Category and Service Level,) Time Block, Room, and Support Unit. Here's how…

- When an Incident is raised, we know the Room Block (via Room,) the Time Block, and the Service Category Level, therefore we know the Support Responsibility, and therefore the Support Unit.
- We also know which Techs are badged for that Service Category Level, and which Techs are assigned to that Support Unit at that time.
- Now we have a pool of Techs the Incident could be dispatched to, for them to "bid on," Uber-style.

The underlying "Concept Plus" Model



Summary of findings

The assertions and the ERD showed the idea could be implemented:

- When an Incident is raised, we know the Room Block (via Room,) the Time Block, and the Service Category Level, therefore we know the Support Responsibility, and therefore the Support Unit.

- We also know which Techs are badged for that Service Category Level, and which Techs are assigned to that Support Unit at that time.

- Now we have a pool of Techs the Incident could be dispatched to, for them to “bid on.”

Other courses for analysts by Alec Sharp

Working With Business Processes – *Process Change in Agile Timeframes* 2 days

Business processes matter, because business processes are how value is delivered. Understanding how to work with business processes is now a core skill for business analysts, process and application architects, functional area managers, and even corporate executives. But too often, material on the topic either floats around in generalities and familiar case studies, or descends rapidly into technical details and incomprehensible models. This workshop is different – in a practical way, it shows how to discover and scope a business process, clarify its context, model its workflow with progressive detail, assess it, and and transition to the design of a new process by determining, verifying, and documenting its essential characteristics. Everything is backed up with real-world examples, and clear, repeatable guidelines.

Business-Oriented Data Modelling – *Useful Models in Agile Timeframes* 2 days

Data modelling was often seen as a technical exercise, but is now known to be essential to other initiatives such as business process change, requirements specification, Agile development, and even big data, analytics, and data lake implementation. Why? – because it ensures a common understanding of the things – the entities or business objects – that processes, applications, and analytics deal with. This workshop introduces concept modelling from a non-technical perspective, provides tips and guidelines for the analyst, and explores entity-relationship modelling at contextual, conceptual, and logical levels using techniques that maximise client involvement.

Working With Business Processes Masterclass – *Aligning Process Work with Strategic, Organisational, and Cultural Factors* 3 days

This 3-day interactive workshop combines the core content from two highly-rated classes by Alec Sharp – "Working With Business Processes" and "Advanced Business Process Techniques." This structure is popular because it gets both new and experienced practitioners to the same baseline on Claritiq's unique, agile, and ultra-practical approach to Business Process Change. First, it shows how to effectively communicate Business Process concepts, discover and scope a business process, assess it and establish goals, and model it with progressive detail. Then, it shifts to advanced topics – specific, repeatable techniques for developing a process architecture, encouraging support for change, and completing a feature-based process design. The emphasis is always on ensuring business process initiatives are aligned with human, social, cultural, and political factors, and enterprise mission, strategy, goals, and objectives.

Business-Oriented Data Modelling Masterclass – *Balancing Engagement, Agility, and Complexity* 3 days

Our most popular workshop! This intensive 3-day workshop combines the core content from two popular offerings by Alec Sharp – "Business Oriented Data Modelling" and "Advanced Data Modelling." First, the workshop gets both new and experienced modellers to the same baseline on terminology, conventions, and Clariteq's unique, business-engaging approach. We ensure a common understanding of what a data model *really* is, and maximising its relevance. Then, we provide intense, hands-on practice with more advanced situations, such as the enforcement of complex business rules, handling recurring patterns, satisfying regulatory requirements to model time and history, capturing complex changes and corrections, and integrating with dimensional modelling. Always, the philosophy is that a data model is a description of a business, not of a database, and the emphasis is on engaging the business and improving communication.

Model-Driven Business Analysis Techniques – *Proven Techniques for Processes, Applications, and Data* 3 days

Simple, list-based techniques are fine as a starting point, but only with more rigorous techniques will a complete set of requirements emerge, and those requirements must then be synthesised into a cohesive view of the desired to-be state. This three-day workshop shows how to accomplish that with an integrated, model-driven framework comprising process workflow models, a unique form of use cases, service specifications, and business-friendly data models. This distinctive approach has succeeded on projects of all types because it is "do-able" by analysts, relevant to business subject matter experts, and useful to developers. It distills the material from Clariteq's three, two-day workshops on process, data, and use cases & services.

**** Note: two-day in-person workshops are delivered virtually as three half-day sessions via Zoom.*
Three-day in-person workshops are delivered virtually as five half-day sessions via Zoom.

Thank you – stay in touch!

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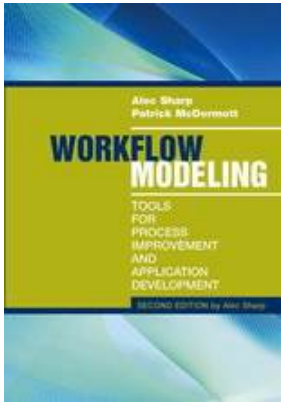

And most of all, if you have questions or comments…
don't be shy – send me a note!