

A process and product:

**From A4, to the FRAM Visualiser,
to Post-It notes, to Visio**

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Presentation Plan

Introduction to context

Journey of FRAM analysis

- A4
- FRAM Visualiser
- Post-It notes
- Visio

Overview of study:

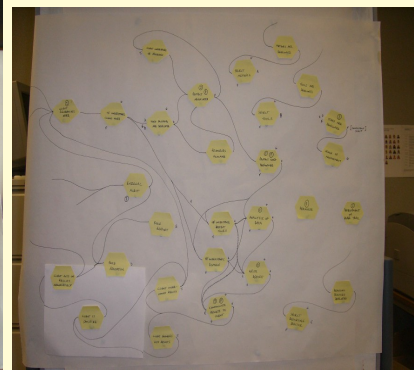
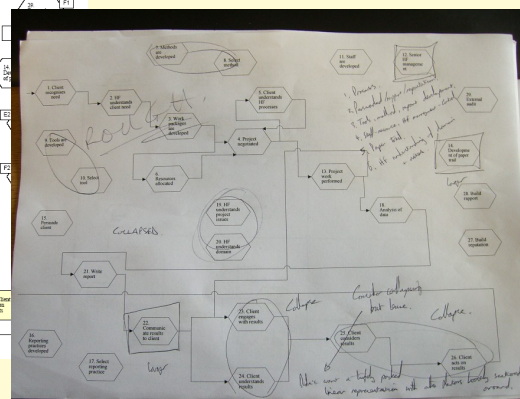
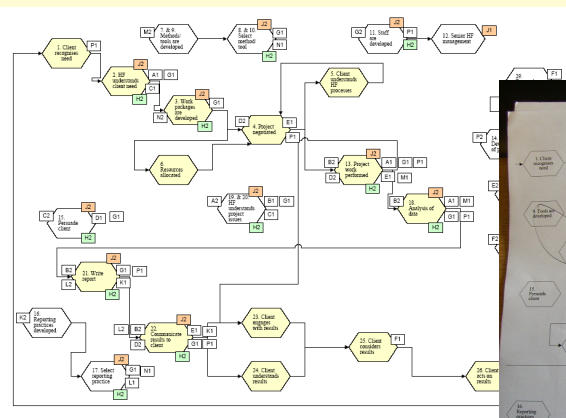
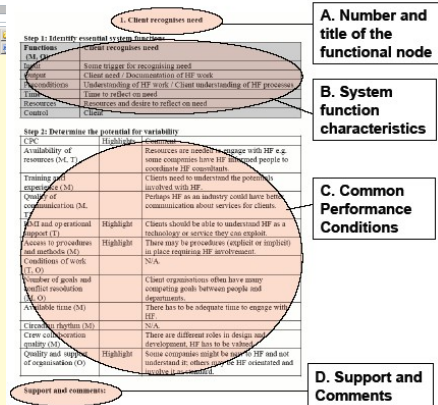
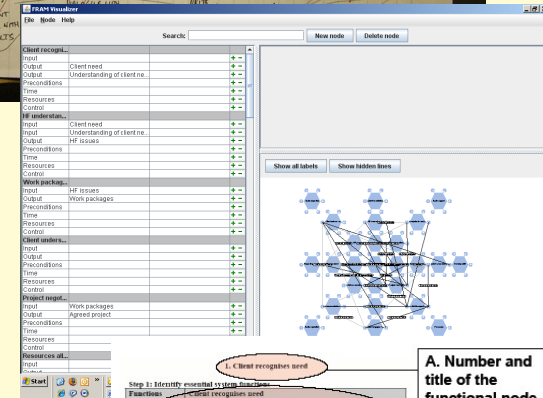
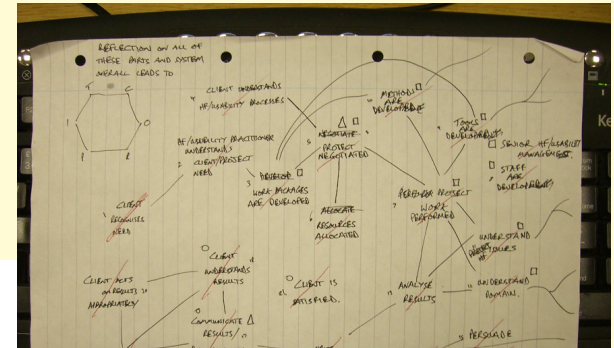
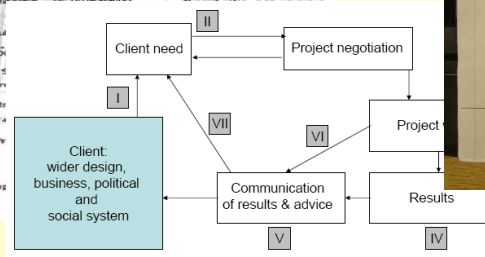
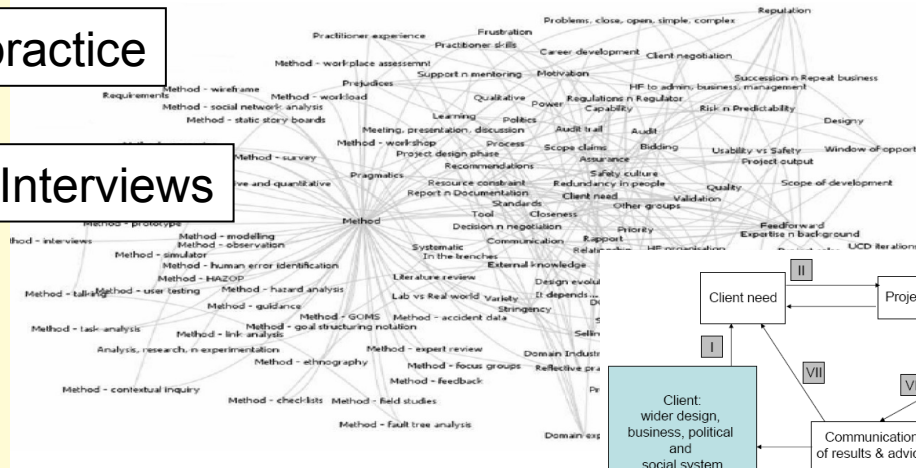
Understanding the choice and use of HSI methods in a 'system of HSI practice'

22 semi-structured interviews of HSI practitioners

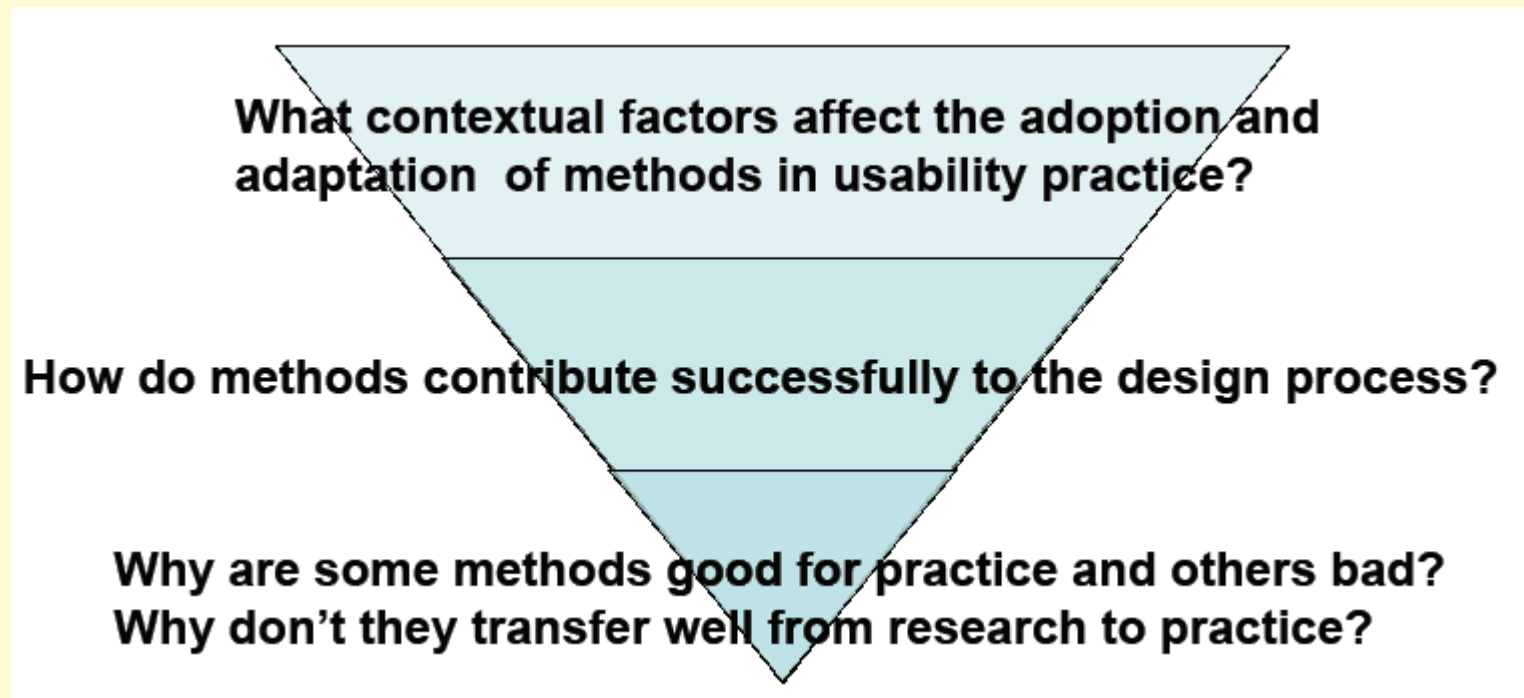
- 9 usability practitioners in website design
- 13 human factors practitioners in safety-critical systems.

Methods are selected to positively resonate with context...
... to maximise potential under constrained resources

Interviews



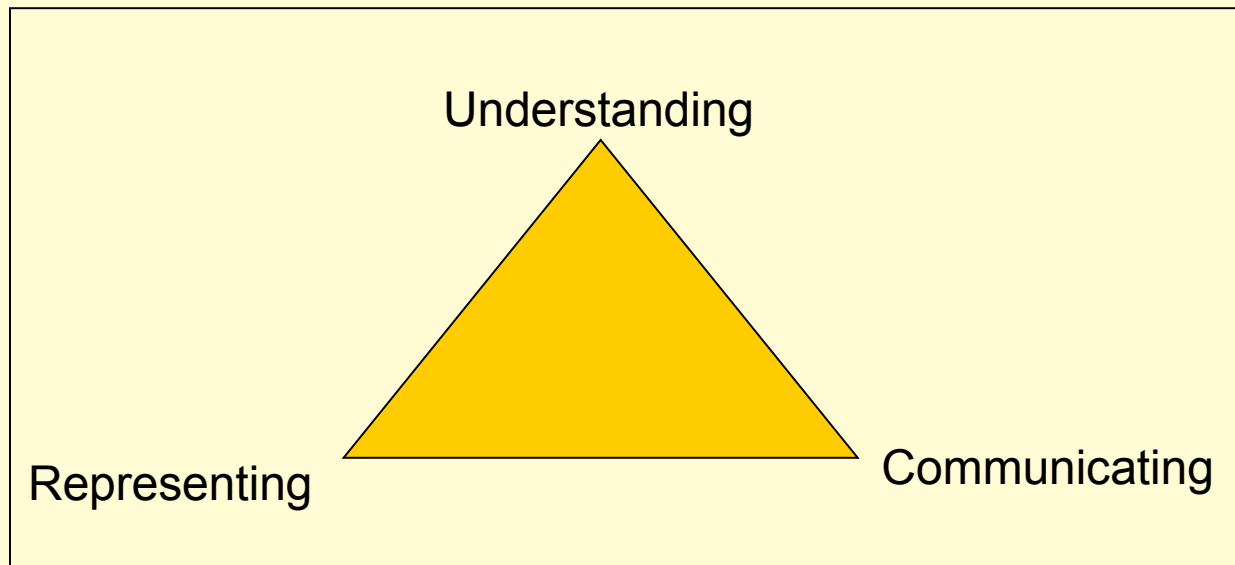
Context shaping factors



[illegible]

Importance of displays in analysis

Displays have important consequences for the cognitive work...



Importance of displays in analysis

Miles and Huberman (1994, p. 11)

“You are what you eat” might be transposed to **“You know what you display.”**

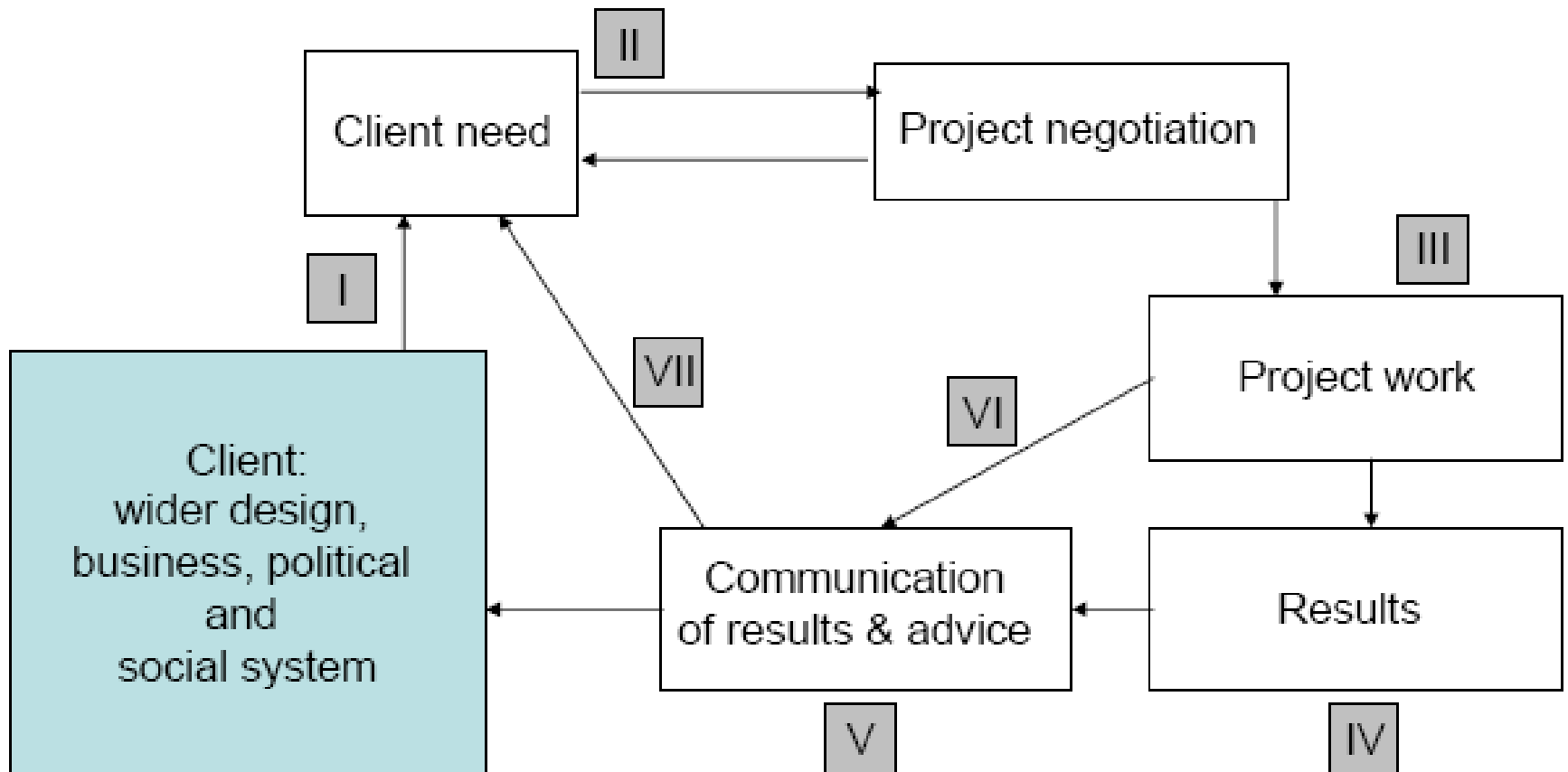
Ryle (1949)

Theory-building – supports internal

Schön (1983)

Back-talk – when the external talks back

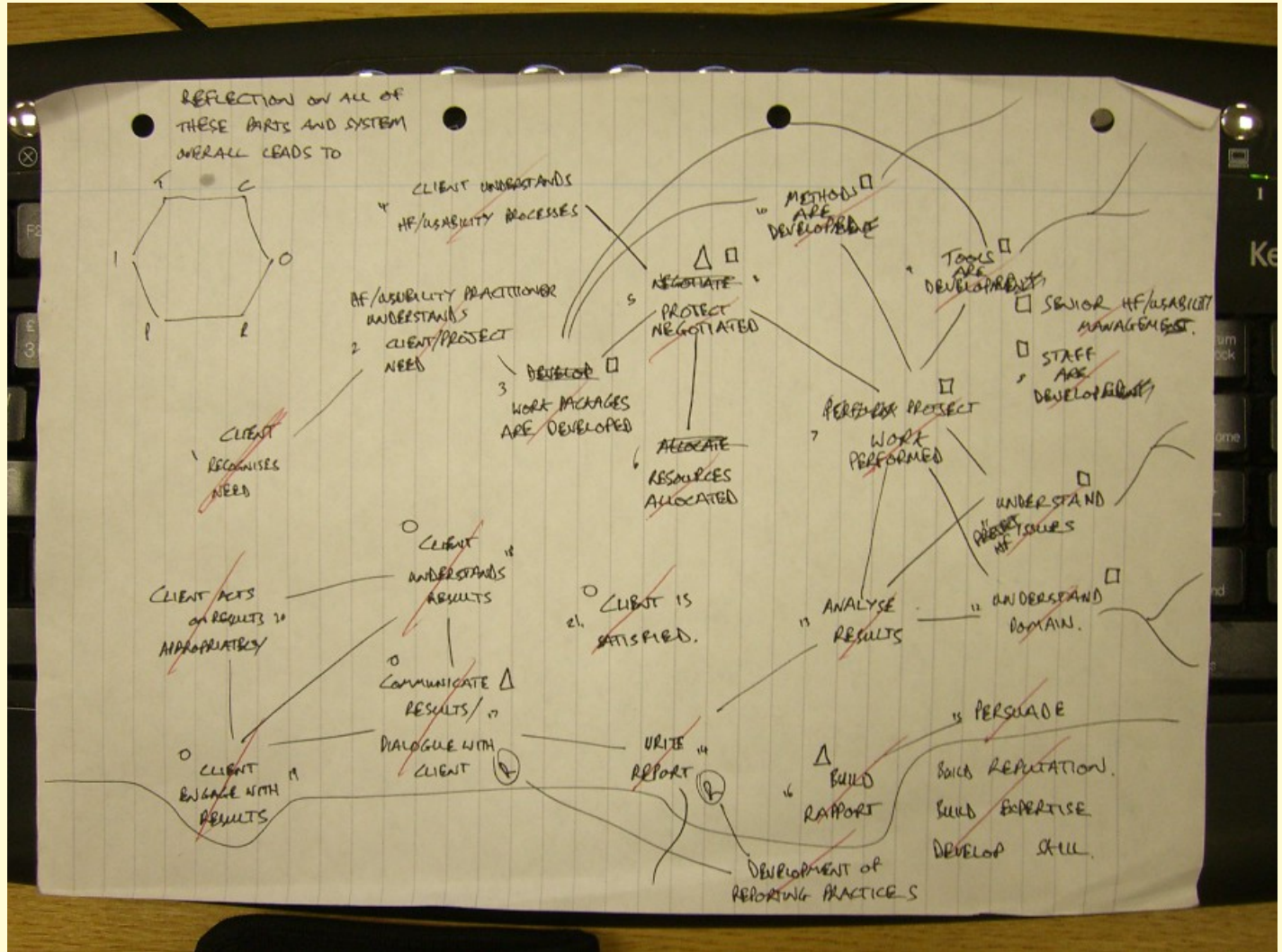
Analysis before FRAM



Don't want to
write many
sheets

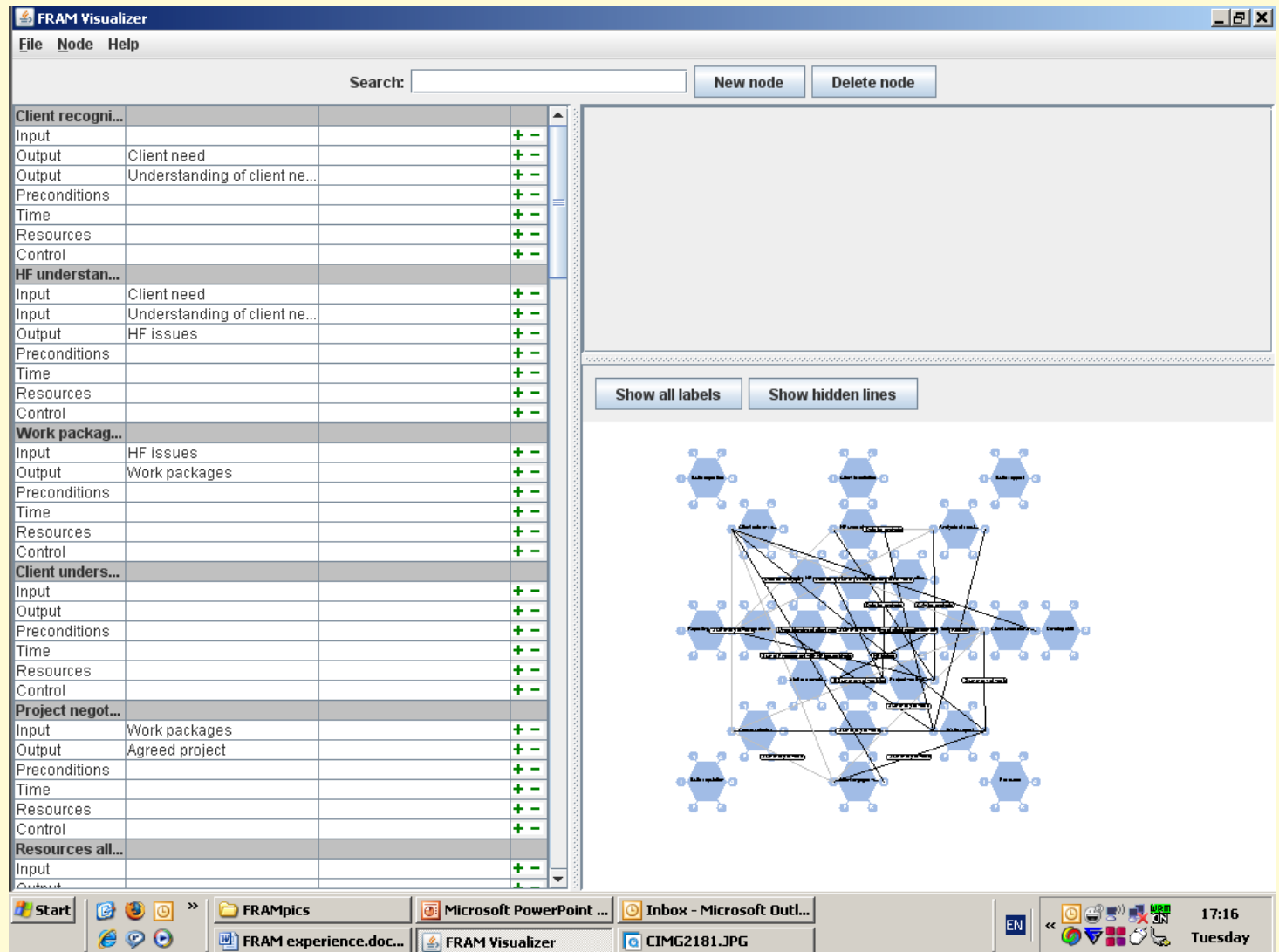
Difficult to
make changes.

Need more flexibility



FRAM Visualiser

Great! Just what I was looking for



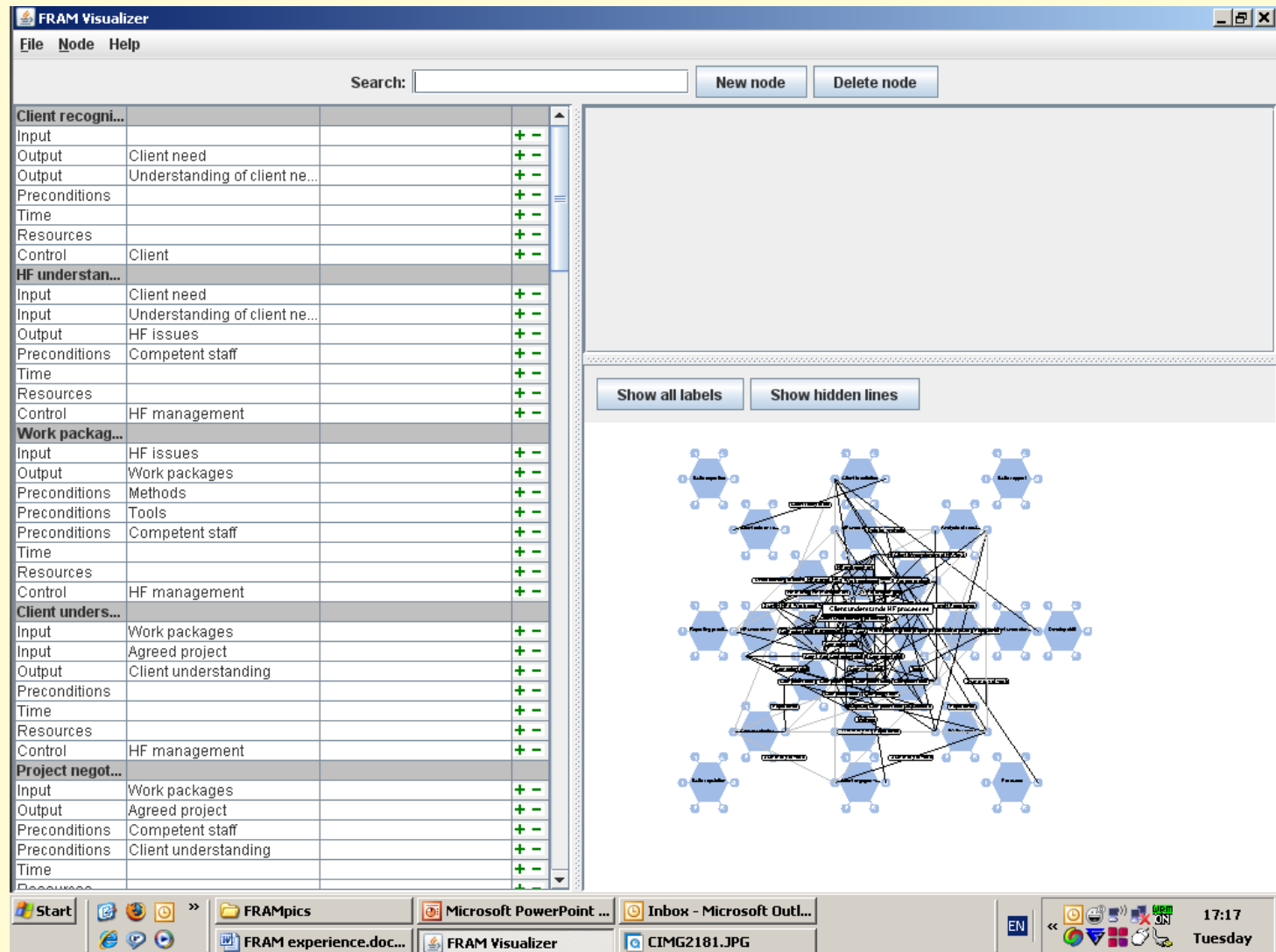
The screenshot shows the FRAM Visualizer application window. The title bar reads "FRAM Visualizer". The menu bar includes "File", "Node", and "Help". Below the menu bar is a search field and two buttons: "New node" and "Delete node".

The left pane displays a hierarchical tree of nodes. The nodes are organized into several categories, each with a header row and several sub-rows. The sub-rows typically include "Input", "Output", "Preconditions", "Time", "Resources", and "Control". The right pane displays a network diagram consisting of numerous blue hexagonal nodes connected by black lines, representing the relationships between the nodes in the tree.

The bottom of the screen shows the Windows taskbar with the Start button and several open applications: "FRAMPics", "Microsoft PowerPoint ...", "Inbox - Microsoft Out...", "FRAM experience.doc...", "FRAM Visualizer", and "CIMG2181.JPG". The system clock in the bottom right corner shows "17:16 Tuesday".

FRAM Visualiser

Facilitates
making links
really well



FRAM Visualizer

File Node Help

Search: New node Delete node

Client recogni...

Input		+ -
Output	Client need	+ -
Output	Understanding of client ne...	+ -
Preconditions		+ -
Time		+ -
Resources		+ -
Control	Client	+ -

HF understan...

Input	Client need	+ -
Input	Understanding of client ne...	+ -
Output	HF issues	+ -
Preconditions	Competent staff	+ -
Time		+ -
Resources		+ -
Control	HF management	+ -

Work packag...

Input	HF issues	+ -
Output	Work packages	+ -
Preconditions	Methods	+ -
Preconditions	Tools	+ -
Preconditions	Competent staff	+ -
Time		+ -
Resources		+ -
Control	HF management	+ -

Client unders...

Input	Work packages	+ -
Input	Agreed project	+ -
Output	Client understanding	+ -
Preconditions		+ -
Time		+ -
Resources		+ -
Control	HF management	+ -

Project negot...

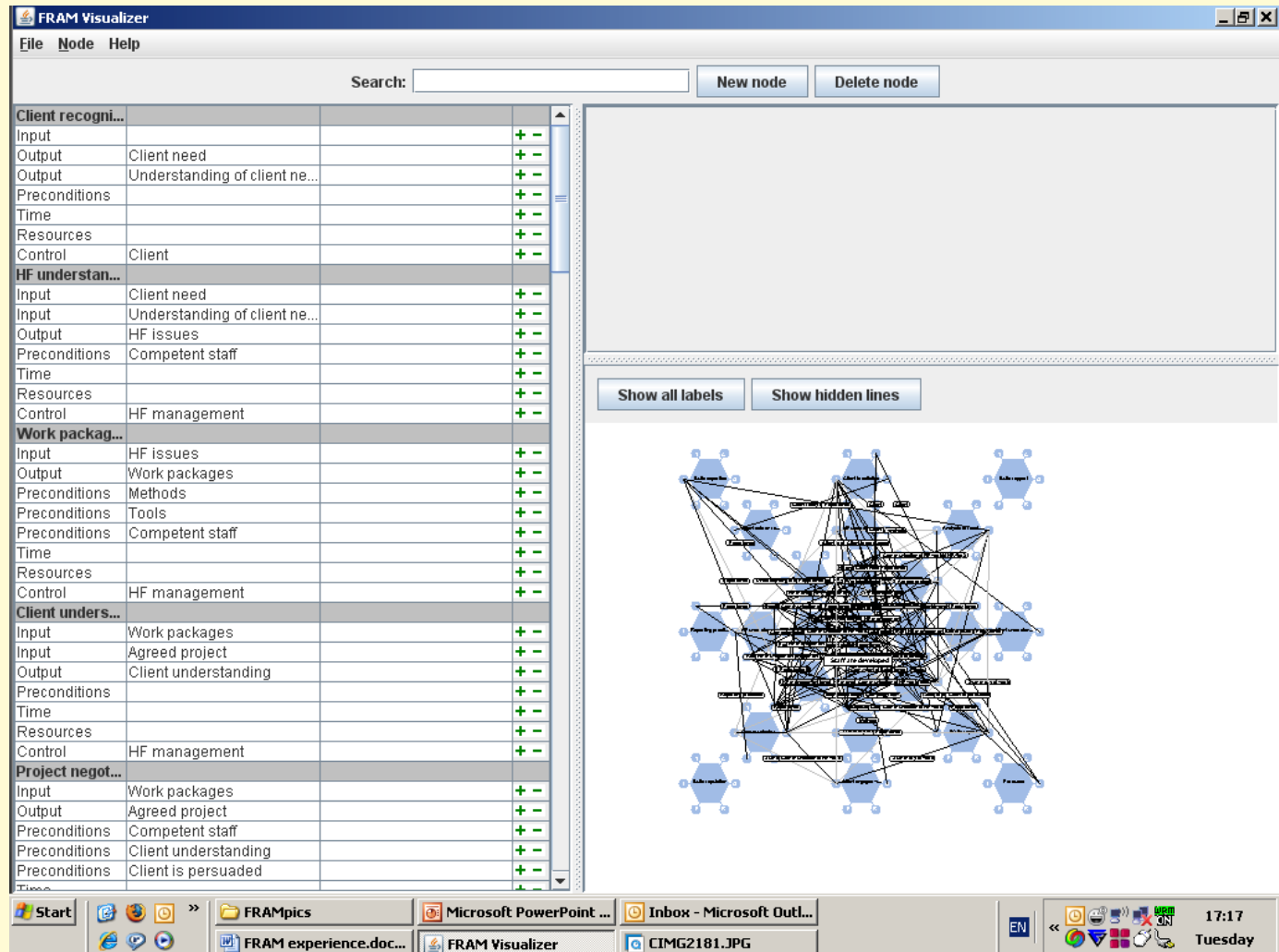
Input	Work packages	+ -
Output	Agreed project	+ -
Preconditions	Competent staff	+ -
Preconditions	Client understanding	+ -
Time		+ -
Resources		+ -

Show all labels Show hidden lines

Start | FRAMPics | Microsoft PowerPoint ... | Inbox - Microsoft Outl... | EN | 17:17 Tuesday

FRAM Visualiser

The representation looks like its in trouble though



FRAM Visualizer

File Node Help

Search: New node Delete node

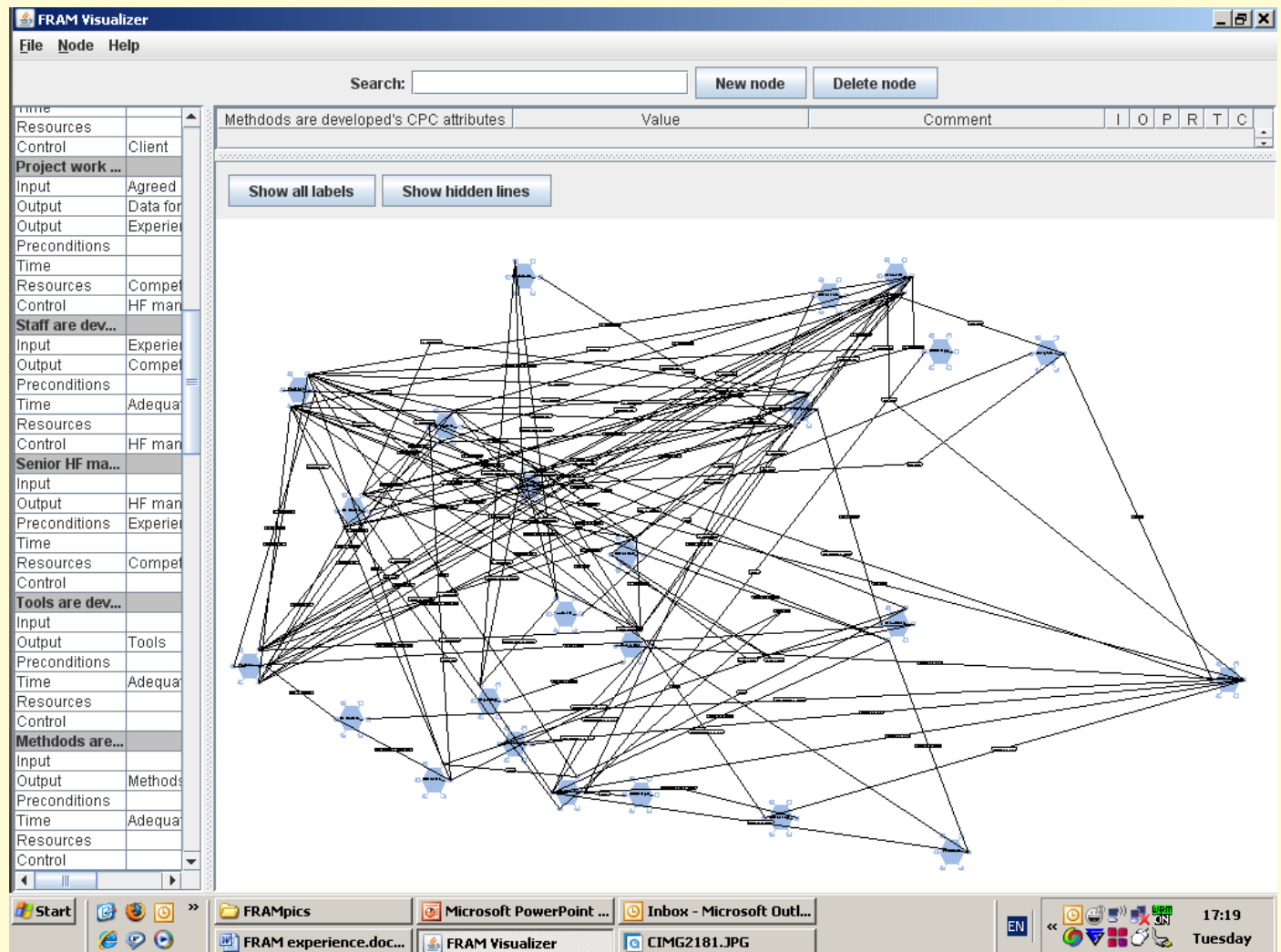
Client recogni...			
Input			+ -
Output	Client need		+ -
Output	Understanding of client ne...		+ -
Preconditions			+ -
Time			+ -
Resources			+ -
Control	Client		+ -
HF understan...			
Input	Client need		+ -
Input	Understanding of client ne...		+ -
Output	HF issues		+ -
Preconditions	Competent staff		+ -
Time			+ -
Resources			+ -
Control	HF management		+ -
Work packag...			
Input	HF issues		+ -
Output	Work packages		+ -
Preconditions	Methods		+ -
Preconditions	Tools		+ -
Preconditions	Competent staff		+ -
Time			+ -
Resources			+ -
Control	HF management		+ -
Client unders...			
Input	Work packages		+ -
Input	Agreed project		+ -
Output	Client understanding		+ -
Preconditions			+ -
Time			+ -
Resources			+ -
Control	HF management		+ -
Project negot...			
Input	Work packages		+ -
Output	Agreed project		+ -
Preconditions	Competent staff		+ -
Preconditions	Client understanding		+ -
Preconditions	Client is persuaded		+ -

Show all labels Show hidden lines

Start FRAMPics Microsoft PowerPoint ... Inbox - Microsoft Out... FRAM experience.doc... FRAM Visualizer CIMG2181.JPG 17:17 Tuesday

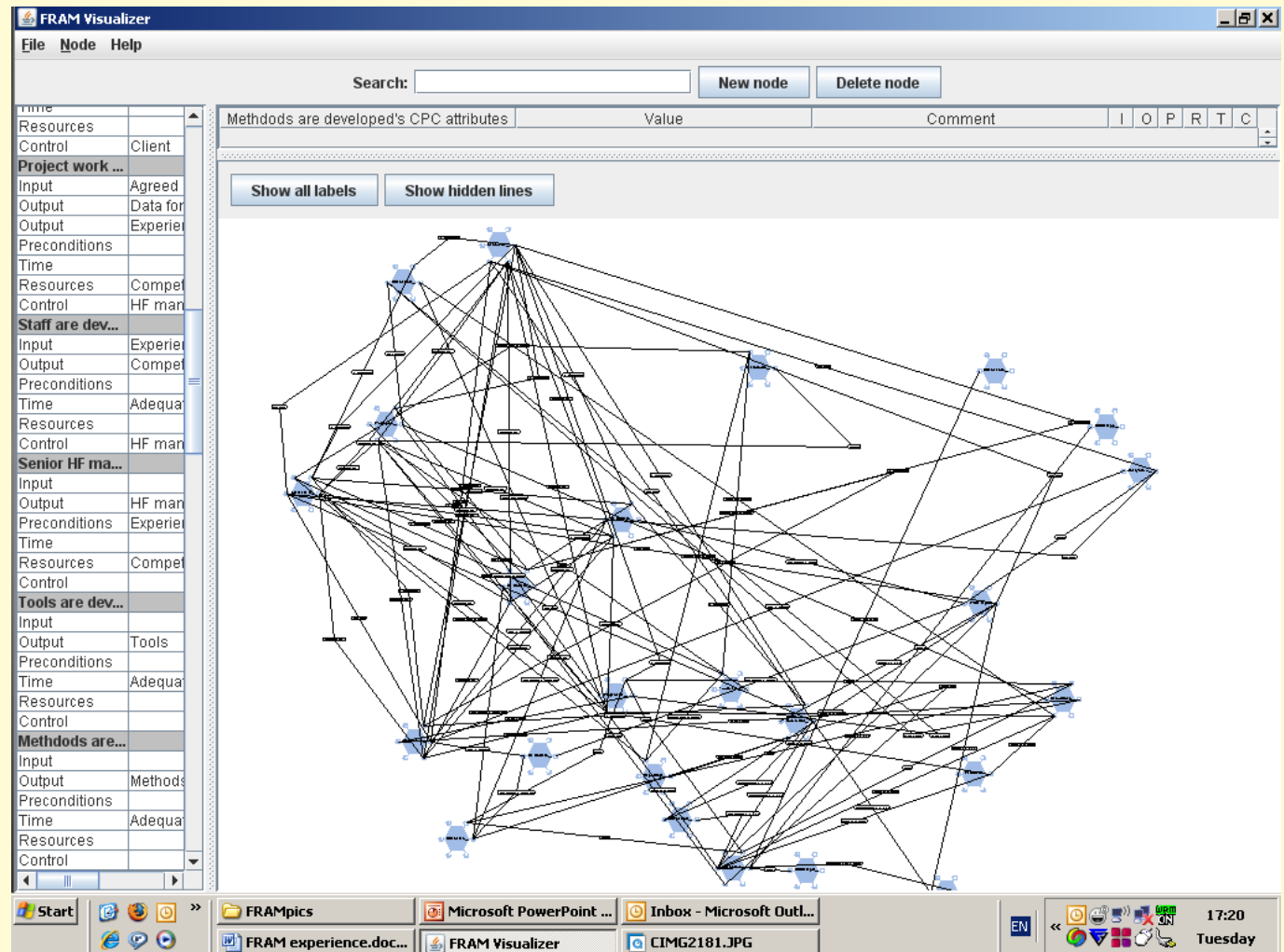
FRAM Visualiser

How I am going to sort this out?



FRAM Visualiser

I try spreading the nodes out and hiding insignificant lines

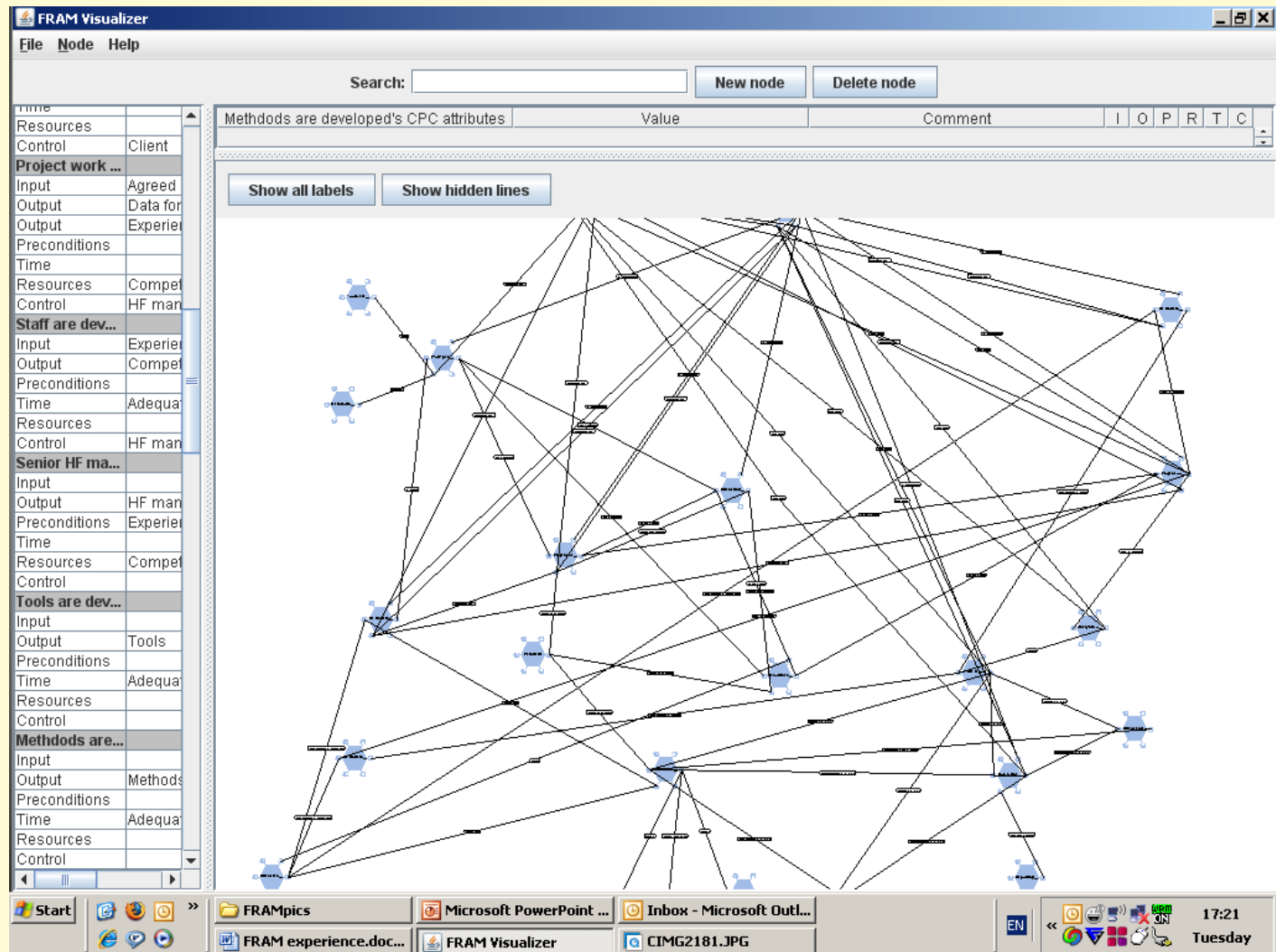


FRAM Visualiser

This makes it look simpler.

However, now managing representation not analysis.

Plus, I don't think I can print it anyway.

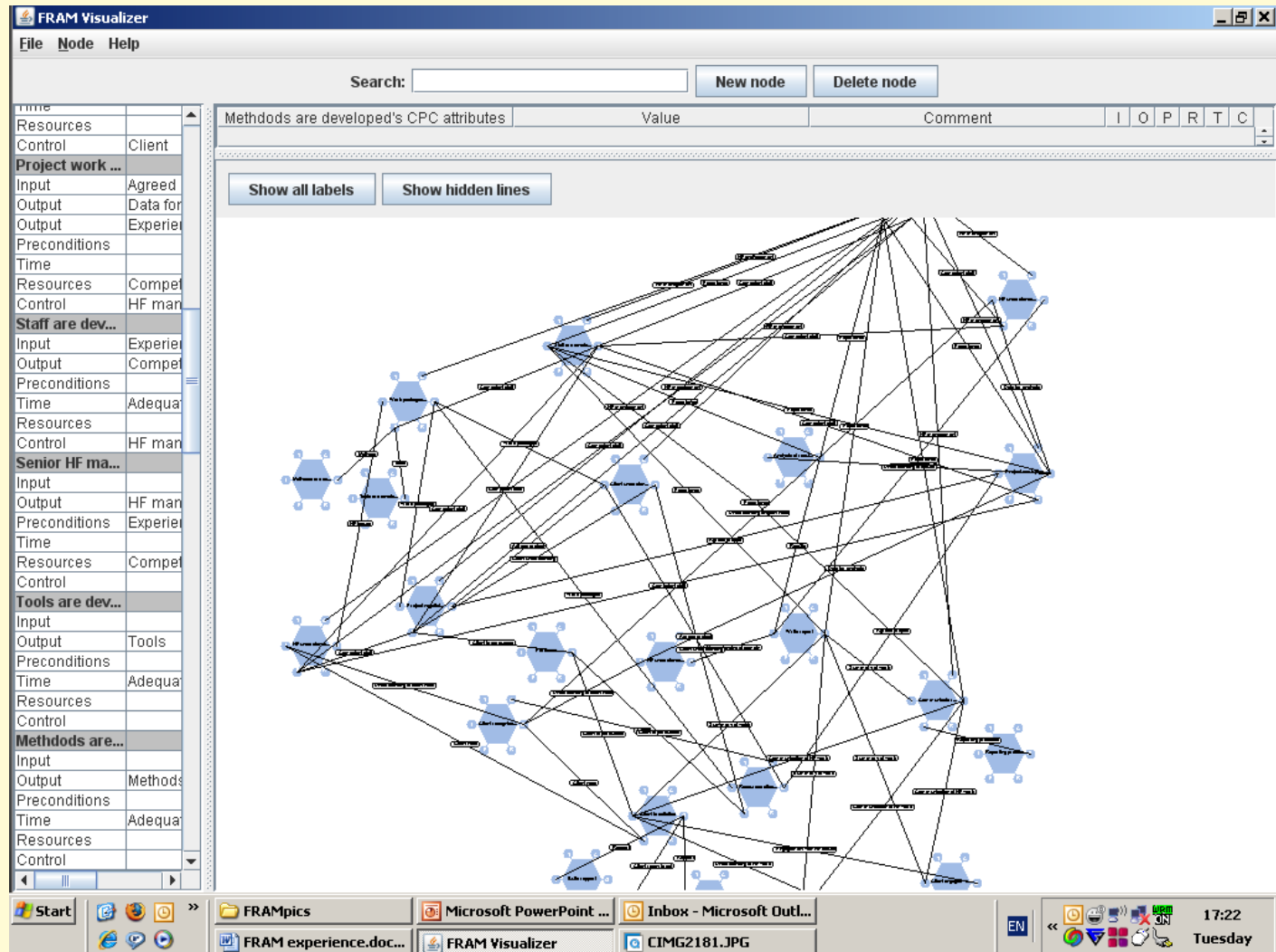


FRAM Visualiser

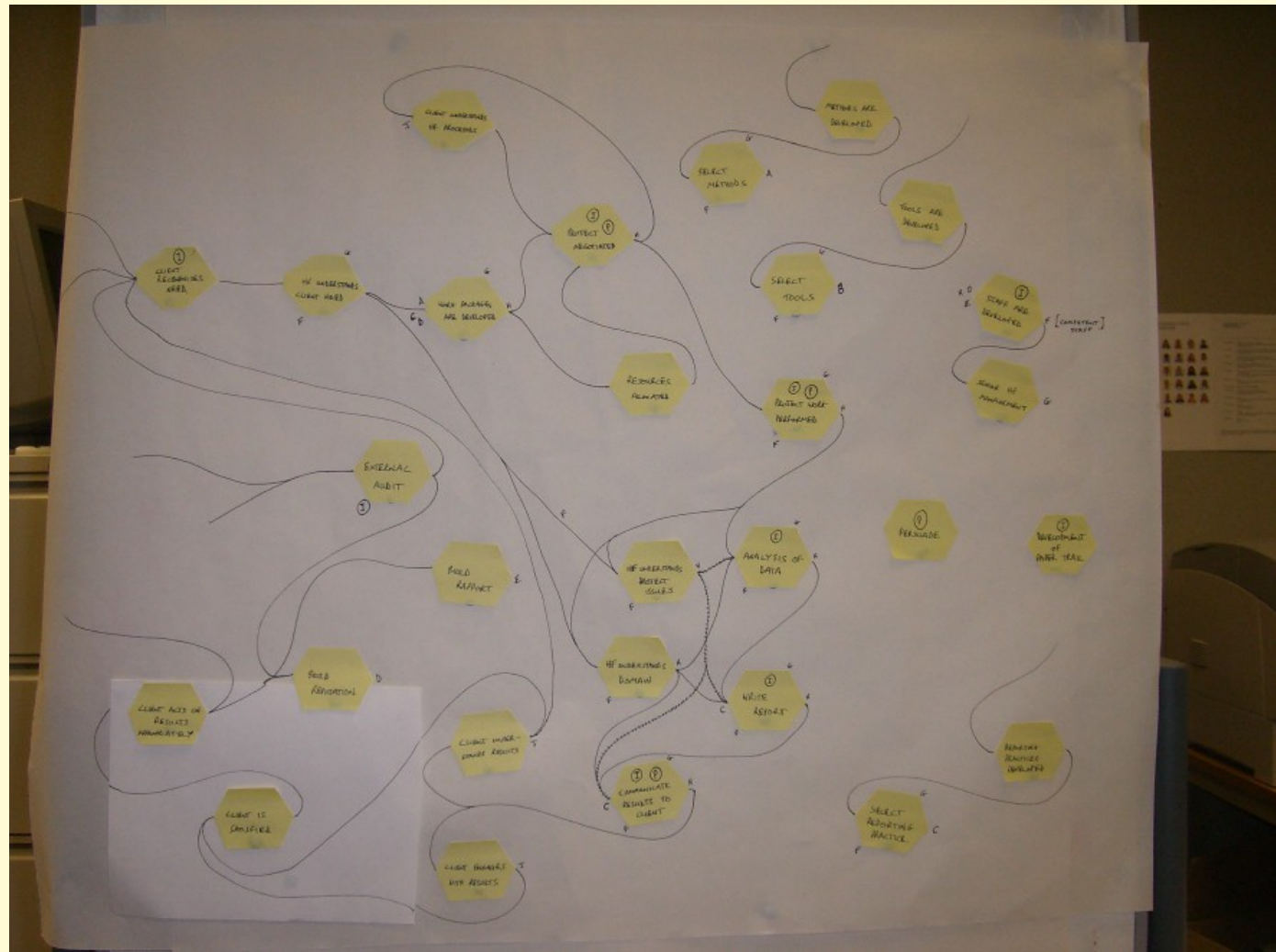
I can't read the nodes, or relationships.

I need to read these to 'see' patterns in the representation.

To enhance – understanding, representation, and communication.



- I cut out hexagon shapes.
- Labelled them.
- Arranged them.
- Then linked them when happy with arrangement.



Post-It Notes

Put it next to my desk so had it present.

The whole network was easily accessible.

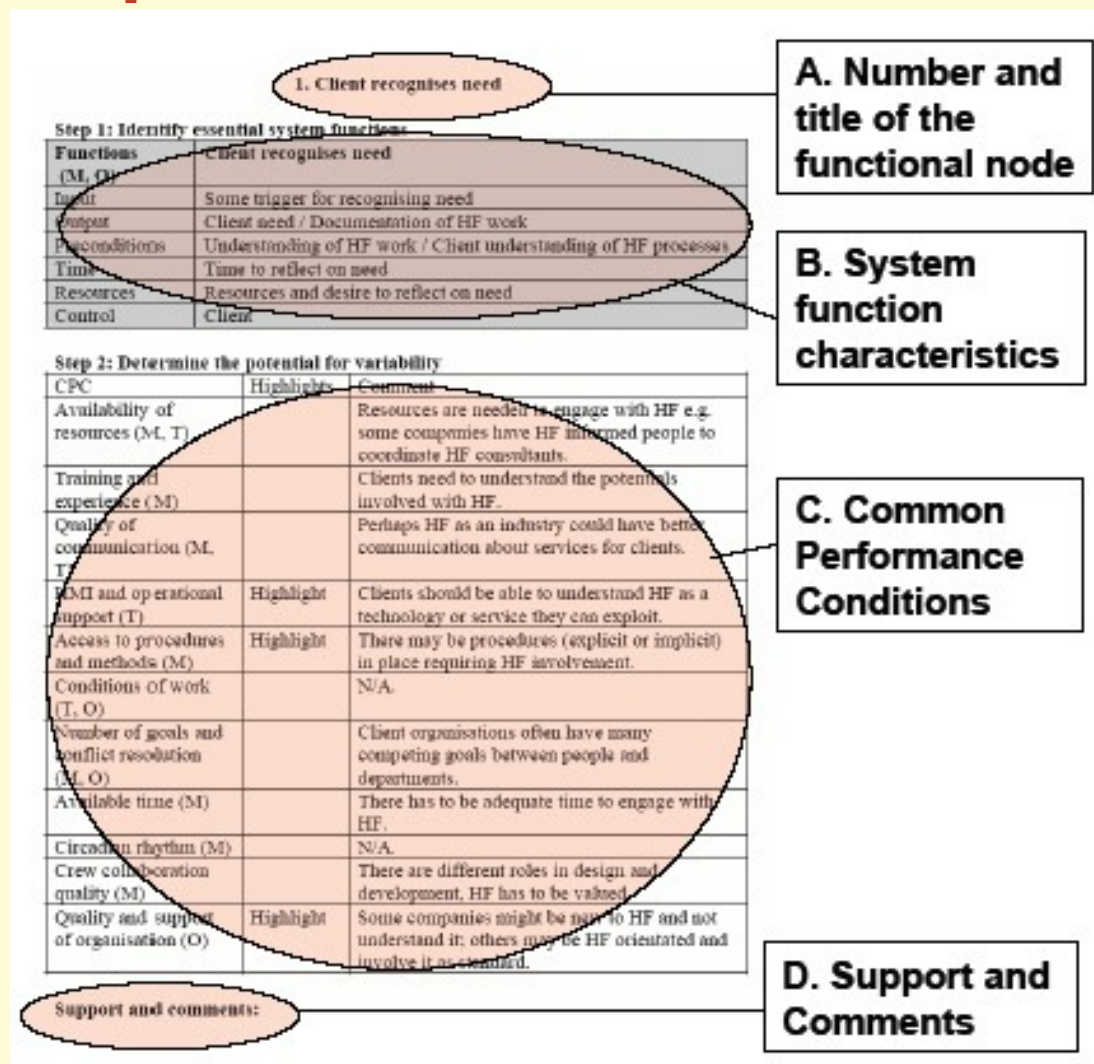
Enhances cognitive task.



Template for Steps 1 & 2

FRAM Visualiser was good at supporting Step 1 from.

Didn't want to lose this and needed record for write-up.

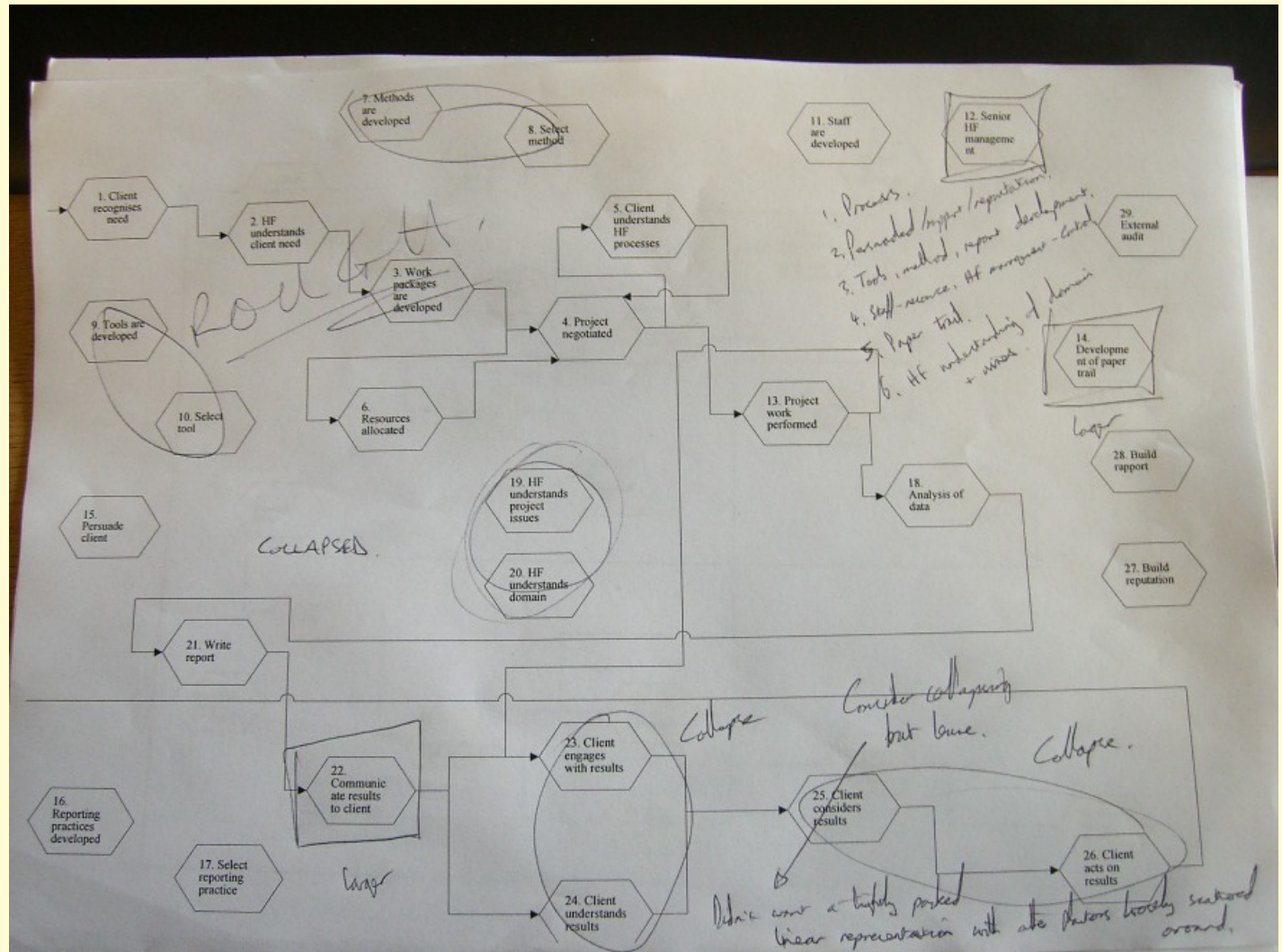


Visio

I will need to represent this to others.

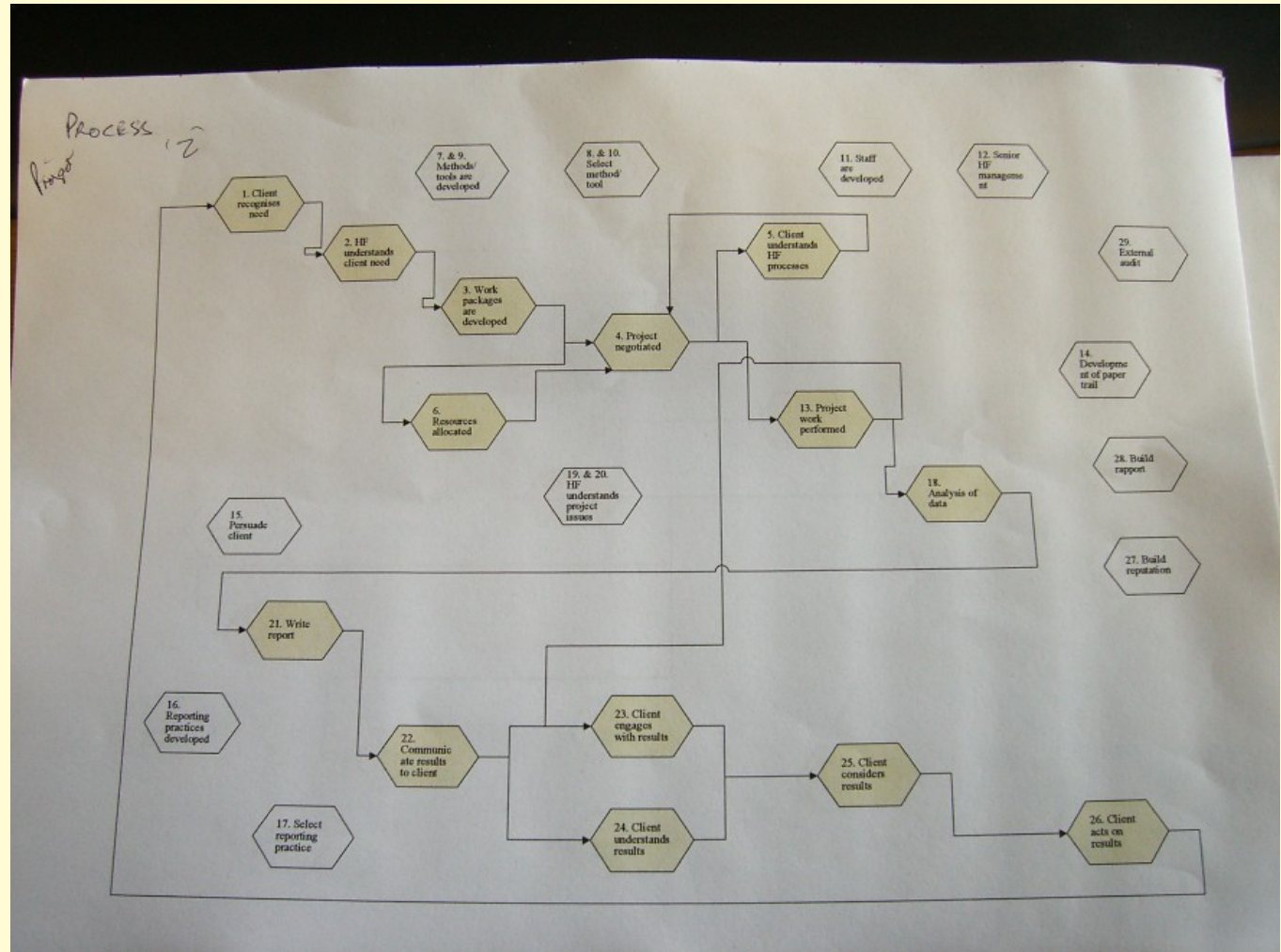
Visio.

Still further iterations.



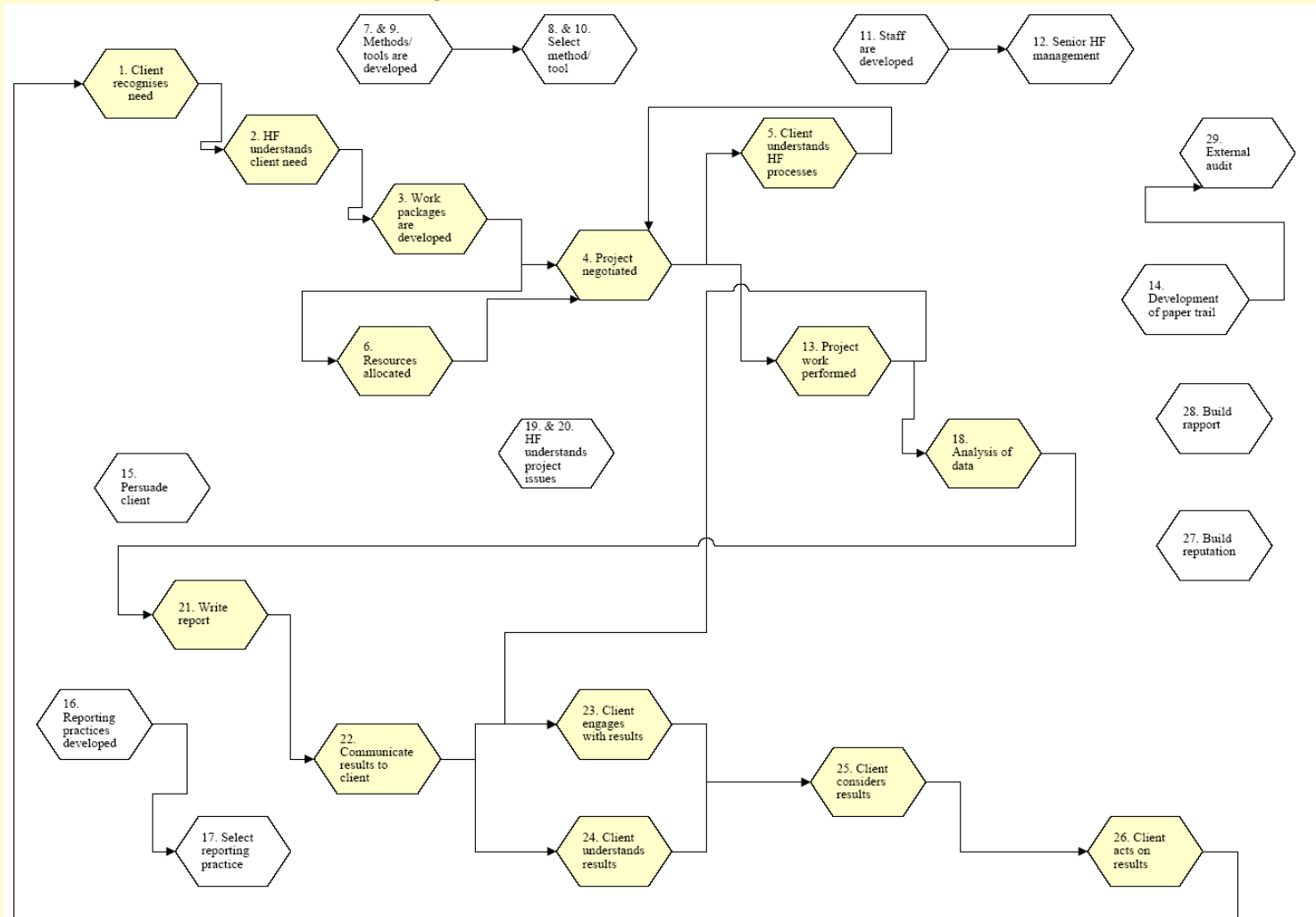
Visio

Central 'Z' process
to maintain
input/output flow.



The case for a positive resonance model

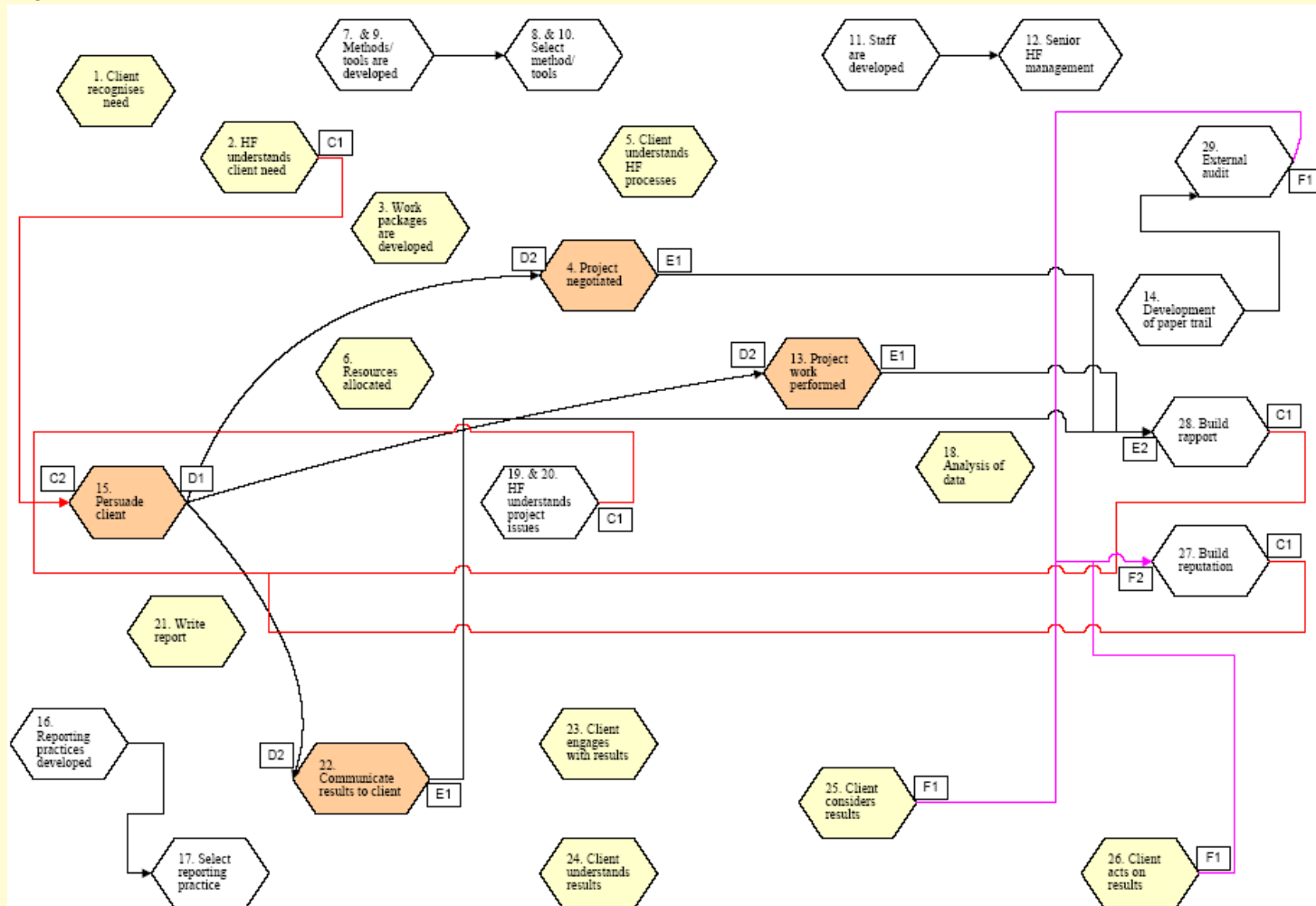
Subsystem 1: The Project Process





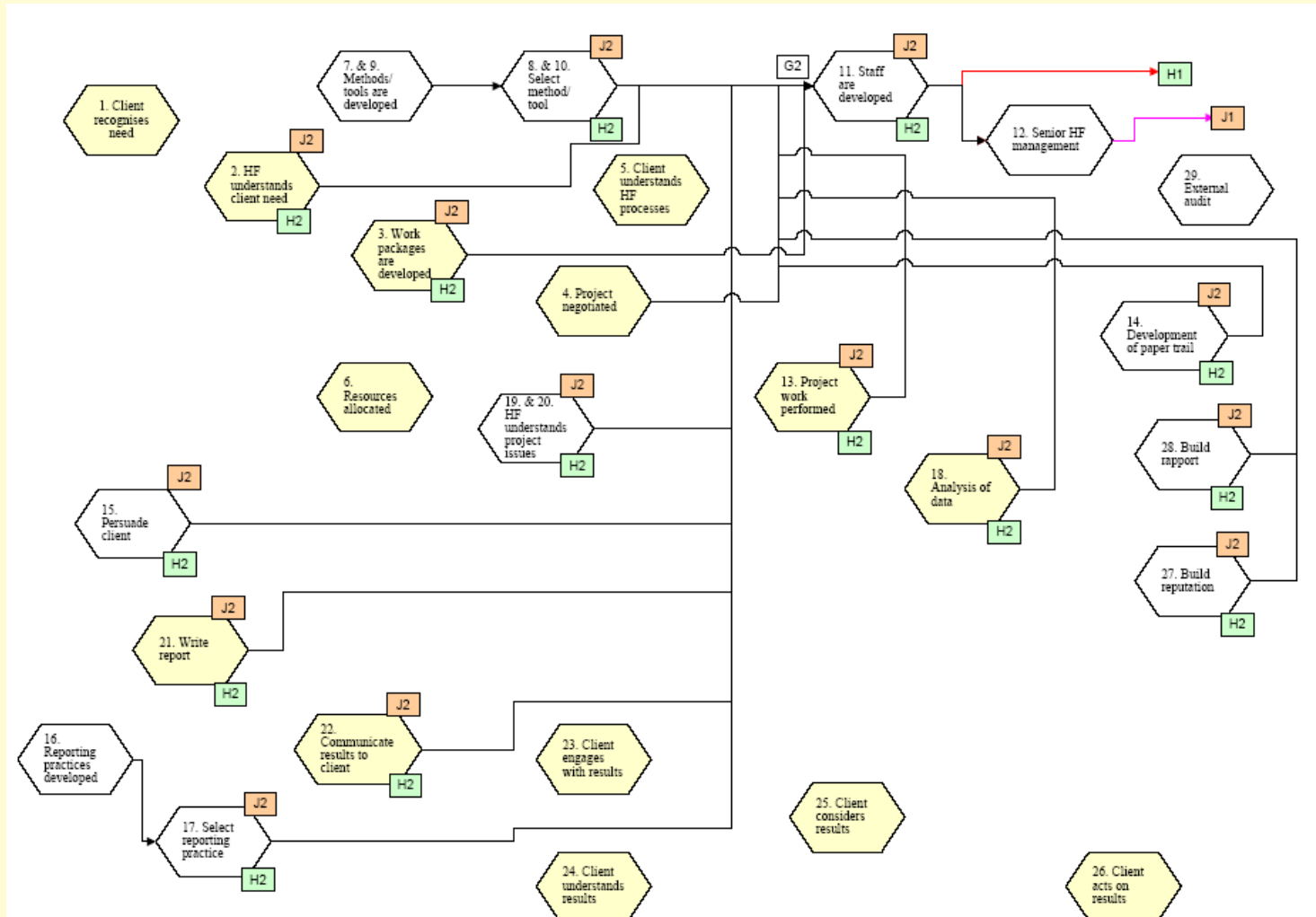
The case for a positive resonance model

Subsystem 3: Persuasion, rapport and reputation



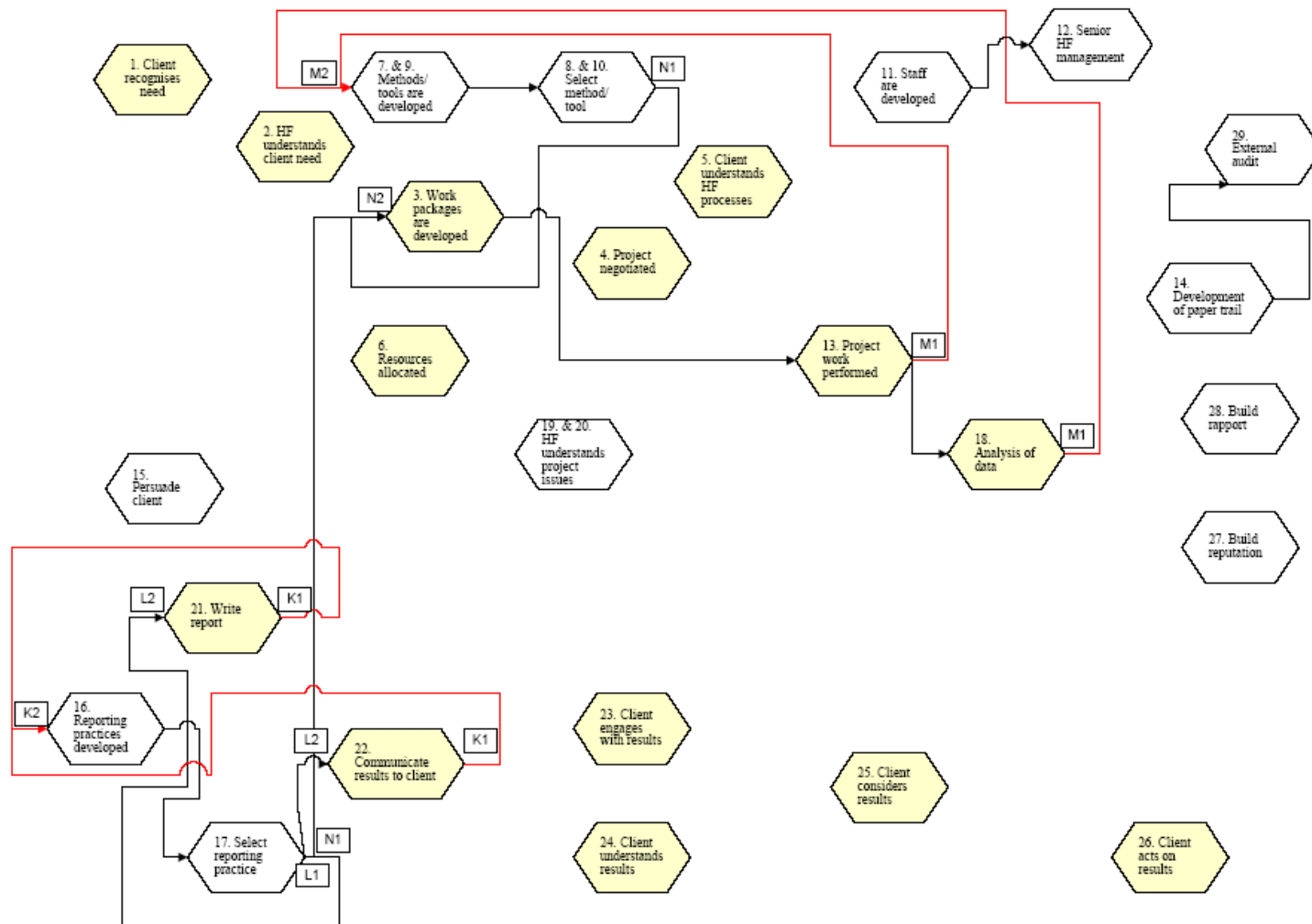
The case for a positive resonance model

Subsystem 4: Staff development and management



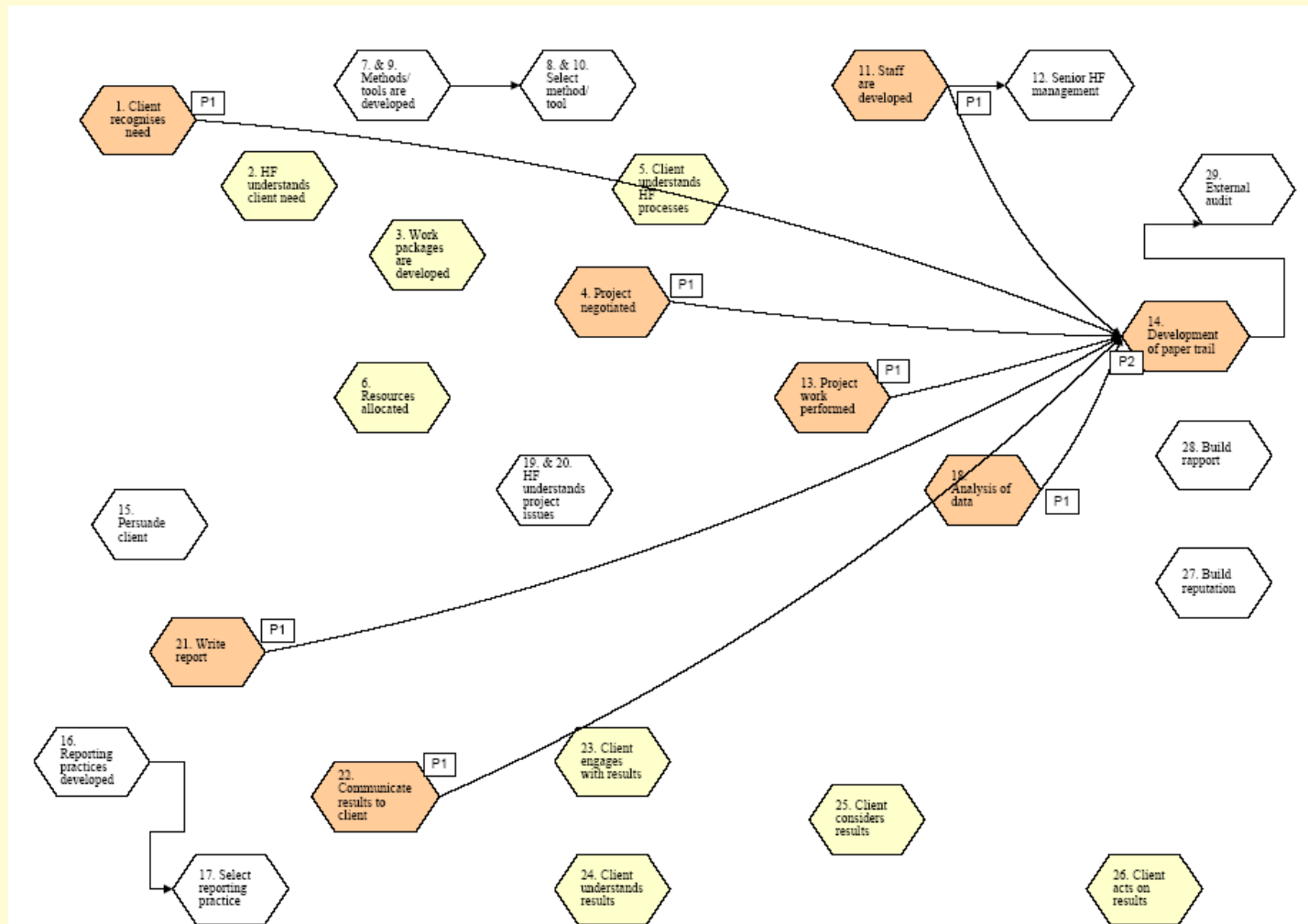
The case for a positive resonance model

Subsystem 5: Tools, methods and reporting practices



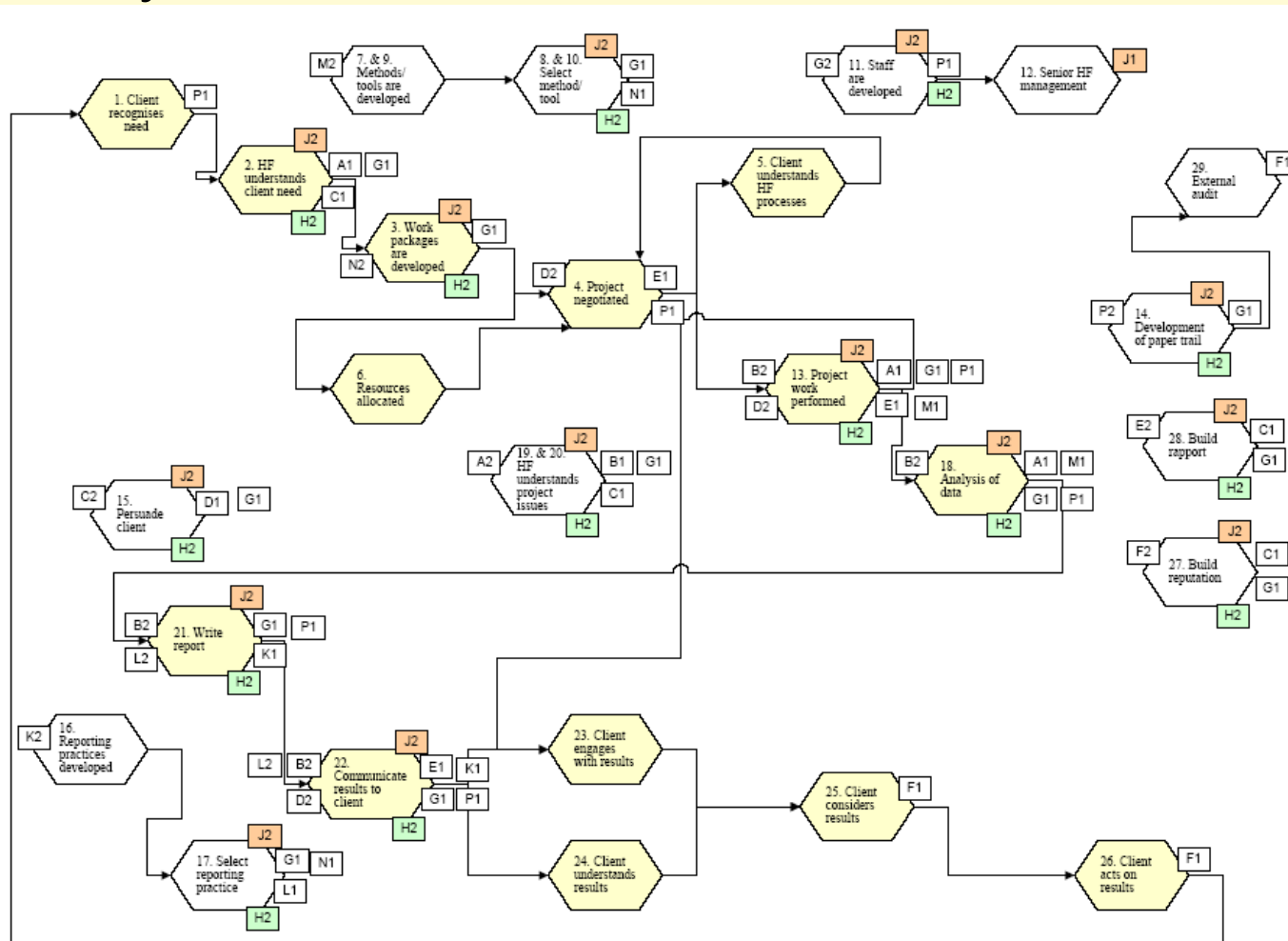
The case for a positive resonance model

Subsystem 6: Auditing and documentation



The case for a positive resonance model

Overall system



How do we know we have the right model?

- Analysis built up through data
- Evidence from transcripts to support individual nodes in template
- Validation pack given back to interviewees to check
- Validation pack given to wider sample for feedback
 - Generally accurate? Clarification? Insignificant nodes or relations?

Is this an issue for everyone?

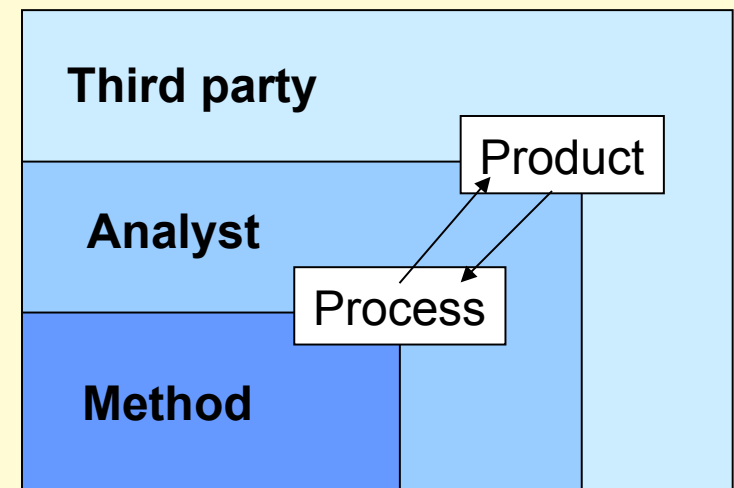
What data set?

Points to note

- Template for typing up Steps 1 and 2 (evidence + ease of reference).
- 'Z' shape for fitting network on one page.
- Presenting subsystems separately.
- Using codes to hide lines in a single network diagram.
- Validation of model

Benefits

- Nodes and relationships developed through 'back-talk'. For example:
 - HF as resource
 - Cycles of reinforcement
- I have a sensible organisation of data.
- Allow reflection on fine tuning system for positive resonance and decrease potential for negative



The case for a positive resonance model

Overall system

