

Lecture 6

Modelling Users

Usage Research Data Modelling

UNIVERSITY OF AUCKLAND

SOFTENG 350

Prof. Robert Amor

Notes from

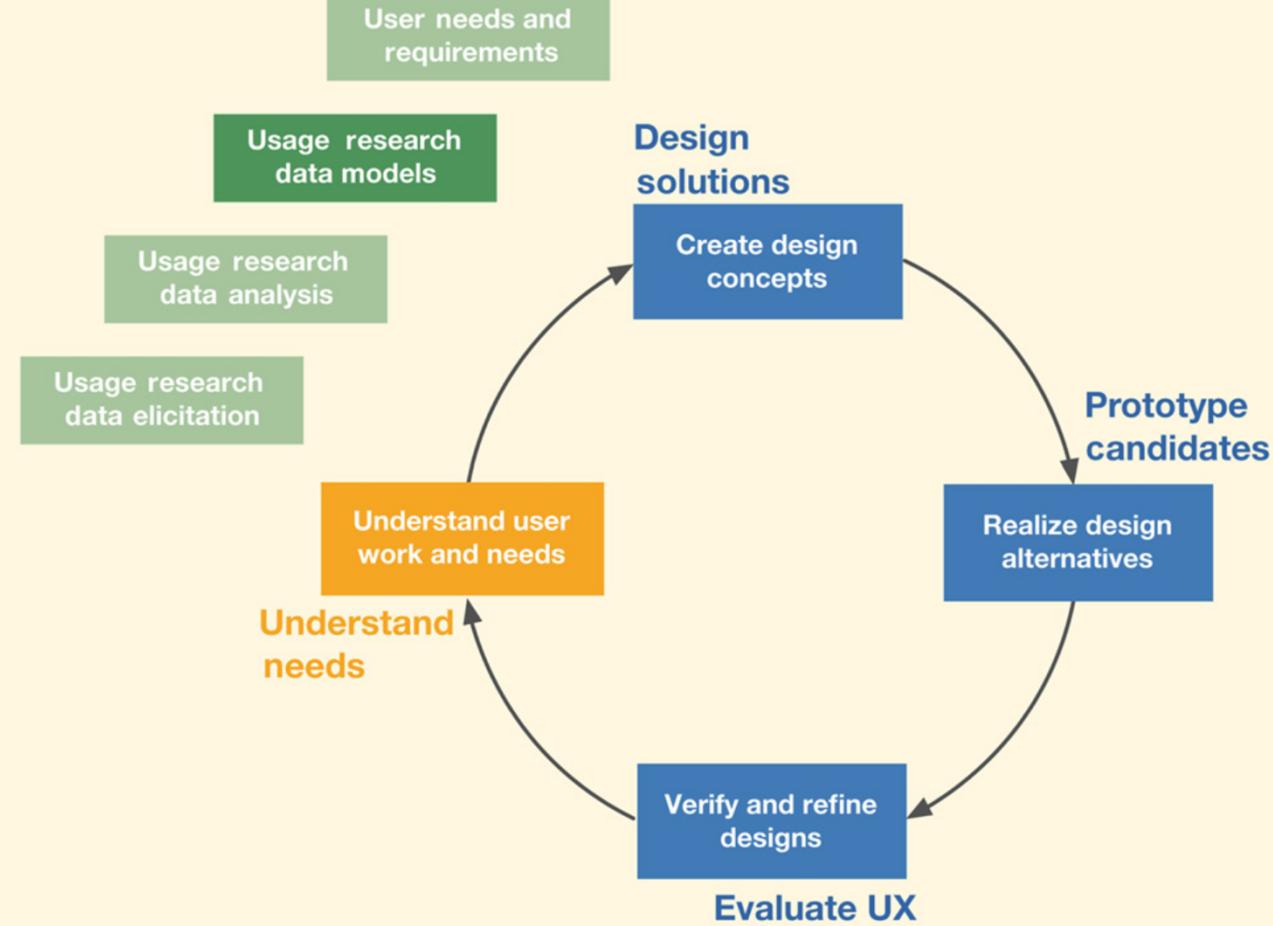
The UX Book Chapter 9 and 5 (for the case study)

[Allowing robots to feel](#)

Learning objectives

- To learn about models for documenting usage research data
- Understand how to create personas and scenarios
- Understand need for user work role and flow models

Where Are We?



Models

- User work role model
- User personas
- Flow model
- Task structure models – Hierarchical Task Inventory
- Task sequence model
- Artifact model
- Physical work environment model
- Information architecture model
- Social model

Case study

- Middleburg University Ticket Transaction Service (MUTTS)
 - Middleburg, a small town in middle America, is home to Middleburg University, a state university that operates a service called the Middleburg University Ticket Transaction Service (MUTTS). MUTTS has operated successfully for several years as a central campus ticket office where people buy tickets for entertainment events, including concerts, plays, and special presentations by public speakers. Through this office, MUTTS makes arrangements with event sponsors and sells tickets to various customers. There is considerable interest in improving and expanding MUTTS.

Ideation and design studios



Ideation and design studios



User Work Role Model

- A work assignment defined by duties, functions and work activities of a person with a certain job title or job responsibility
 - Not always a job title

Work Roles in MUTTS

- Ticket buyer
- Ticket seller
- Event manager
- Advertising manager
- Financial administrator
- Maintenance technician
- Database administrator
- Administrative supervisor
- Office manager
- Assistant officer manager

User Personas

- Personas are archetypes of actual users, defined by the user's goals and attributes
- Align with work roles

“Personas are derived from patterns observed during interviews with and observations of users and potential user (and sometimes customers) of a product”
(Cooper & Reimann, 2003, 67)



User Personas

Personas should be a reflection of the information derived from the data collection activities

- Should be able to point to a direct one-to-one relation with an observed user behavior or statement
 - Otherwise, may be erroneous and will lead to incorrect design decisions
- Yet you have to make them 3-dimensional
 - You need to have enough there to inform the design decisions
 - You have to be able to identify with them as if they were a real person
- Can be a synthesis of characteristics observed over multiple users/potential users

User Personas

- Expected to have:
 - A name (and preferably a photo!)
 - Goals and motivating forces
 - Behaviours and a personality
 - Any relevant background
 - E.g. their past experience with other software (and how they felt about it!)
- They should be a '3-dimensional' person that can serve as a reference
 - "Will this design work for Tim?"

Conceptual Design – User Personas

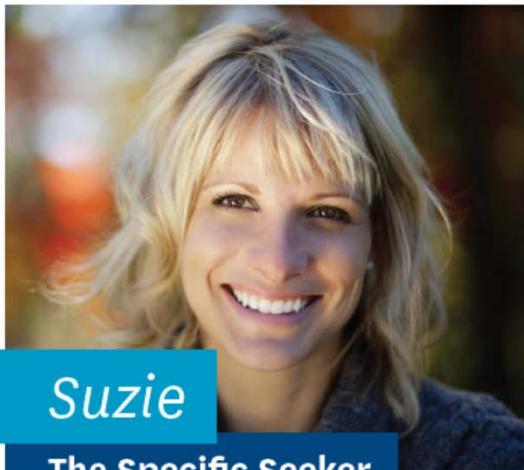
- Advantages of personas:

- They are quick and easy to create.
- They provide a consistent model for all team members.
- They are easy to use with other design methods.
- They make the user “real” in the mind of the designer.
 - i.e. a basis for our ‘empathy’ as designers

- Disadvantages of personas:

- They can be difficult to create if the target audience is international (or just diverse in whatever way)
- Having too many personas will make the work difficult.
 - 6-8 is usual
- There is a risk of incorporating unsupported designer assumptions.

User Persona example - UoA



SUZIE NEEDS:

Transparency | Accuracy | Clarity

Suzie has been a school careers advisor in her hometown of Timaru for 15 years and couldn't be happier with the position. Often referred to as the "school mum", students have learned to rely and trust the bubbly Suz when it's time for them to make important decisions regarding their future. Because of this, she wants to make sure all information she gathers from different university websites is accurate, comprehensible, and easy to compare - not to mention easy to read, as she has impaired vision and uses special tools to make content more accessible to her. Suz typically accesses the site with students by her side, as she navigates information about available courses and programmes and looks up course entry requirements, scholarships, and important application dates.

“

I need confidence that the specific information I find is accurate. It's important that I get the complete picture.

”



AGE
45



OCCUPATION
Careers Advisor



FINANCES
On a budget



LOCATION
Timaru,
New Zealand



EDUCATION
Teaching qual. &
university degree



FAMILY
Single mother of 3

SITE BEHAVIOURS:

Approach to information

Open Focused

Relationship with content

Consume Share/Promote

Visits the University site

Infrequently Often

GOALS:

- Suzie's primary goal is to find specific university information.
- Suzie wants relevant, comprehensive and up-to-date info.
- Suzie needs to access info fast and in one location.

TECH CONFIDENCE:



TECH USAGE:



Phone



Laptop

WEBSITES & BRANDS:



Kathmandu®



Farmers



Pinterest



trade me nz's #1 buy and sell



EZIBUY



stuff.co.nz



SUZ LOVES: Horseback riding, gardening, family time, book club, tramping, supporting local businesses

User Persona example - UoA



Suzie

The Specific Seeker

SUZIE NEEDS:
Transparency | Accuracy | Clarity

Suzie has been a school careers advisor in her hometown of Timaru for 15 years and couldn't be happier with the position. Often referred to as the "school mum", students have learned to rely and trust the bubbly Suz when it's time for them to make important decisions regarding their future. Because of this, she wants to make sure all information she gathers from different university websites is accurate, comprehensible, and easy to compare - not to mention easy to read, as she has impaired vision and uses special tools to make content more accessible to her. Suz typically accesses the site with students by her side, as she navigates information about available courses and programmes and looks up course entry requirements, scholarships, and important application dates.

User Persona example - UoA

	AGE 45		OCCUPATION Careers Advisor		FINANCES On a budget
	LOCATION Timaru, New Zealand		EDUCATION Teaching qual. & university degree		FAMILY Single mother of 3

User Persona example - UoA

SITE BEHAVIOURS:

Approach to information



Relationship with content



Visits the University site



User Persona example - UoA

GOALS:

- Suzie's primary goal is to find specific university information.
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TECH CONFIDENCE:



TECH USAGE:



Phone



Laptop

User Persona example - UoA

WEBSITES & BRANDS:



SUZ LOVES: Horseback riding, gardening, family time, book club, tramping, supporting local businesses

User Persona example - UoA



Ella

The Explorer

ELLA NEEDS:

Intrigue | Inspiration | Freedom

Ella grew up in Takapuna, a suburb outside of Auckland, with her parents and 2 younger sisters. As the oldest sibling, she always had the explorer mentality. Ever since her toddler years, Ella would never take "just because" as an answer, which is a characteristic that stuck with her through her career. Constantly curious, she became a journalist to satisfy that thirst for uncovering real life stories. When tasked with an assignment, she relies heavily on the local universities for credible information and sources for commentary, as she will browse their sites looking for the perfect topic to cover and the right person to contact. Some things that stick out to her are events, opinion pieces, research coverage, interviews, and both university-wide and faculty related news.

“

I want to discover inspirational stories, and I don't want to miss out if amazing things are happening!

”



AGE
27



OCCUPATION
Journalist



FINANCES
Comfortable



LOCATION
Auckland,
New Zealand



EDUCATION
AUT Undergrad degree



FAMILY
Single, close with
parents and 2 sisters

SITE BEHAVIOURS:

Approach to information



Relationship with content



Visits the University site



GOALS:

- Ella's primary goal is to discover inspiring and interesting information.
- Ella is curious about whether anything new or exciting has been happening at the University, or if anything important is upcoming.
- Ella doesn't have much time to spare, but she will gladly take a detour if something grabs her attention.

TECH CONFIDENCE:



TECH USAGE:



WEBSITES & BRANDS:

KAREN WALKER



ASOS
Discover fashion online

facebook.

Instagram

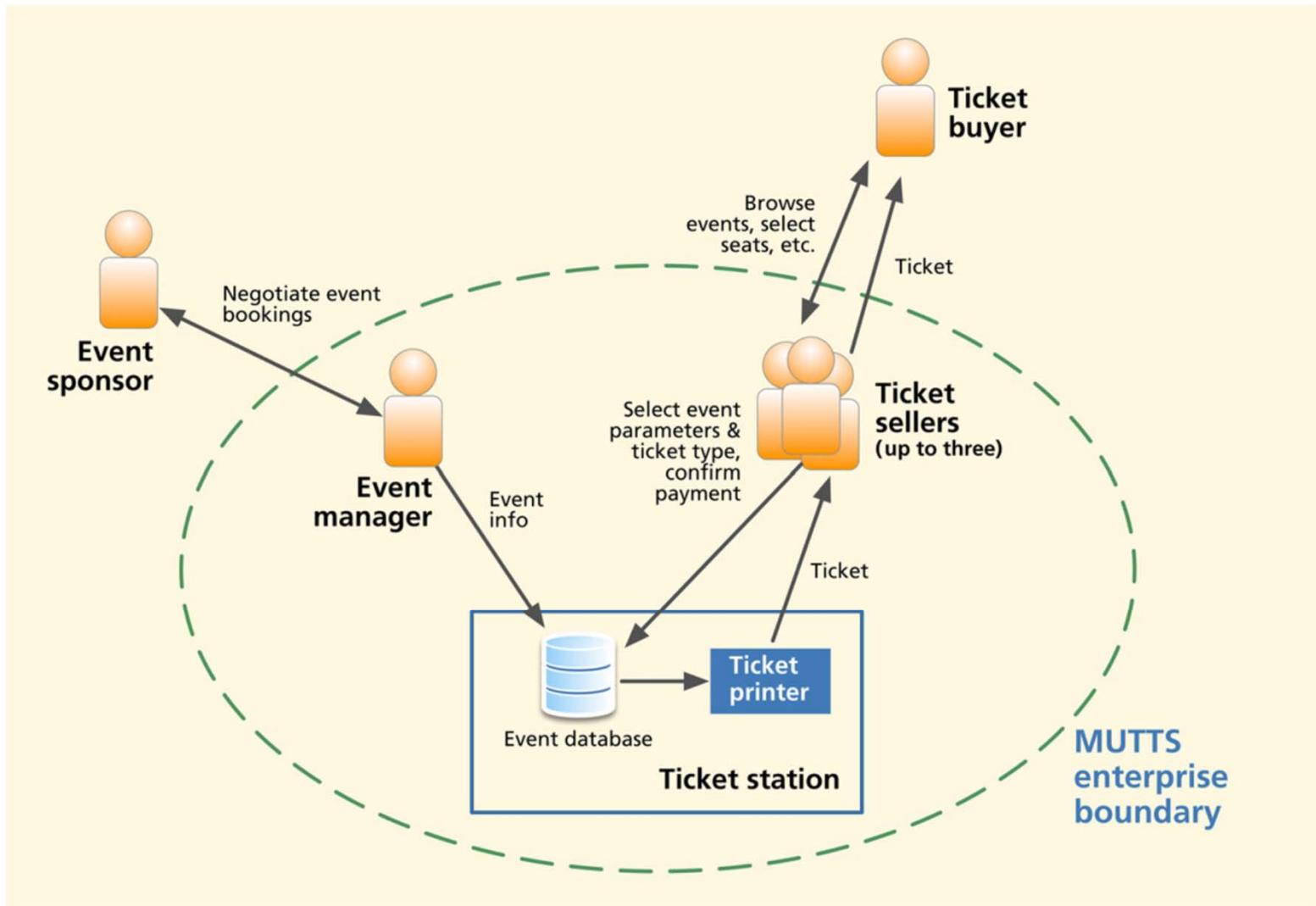
lululemon
athletica

♥ ELLA LOVES: Shopping, yoga, spinning, bubbly brunch with the girls, going out on Ponsonby and Grey Lynn, The Bachelor, celebrity gossip

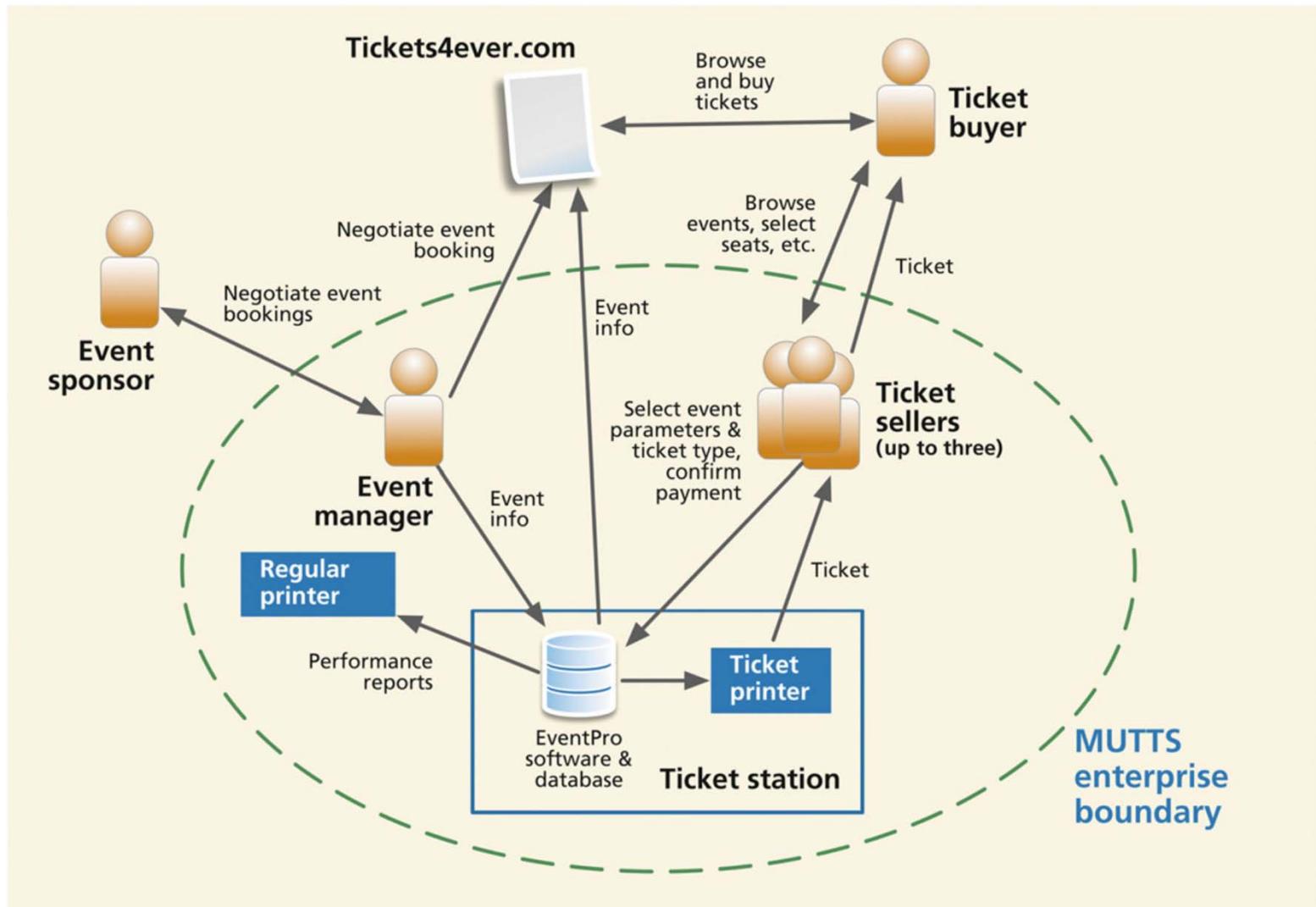
Flow Model

- Visual representation of how information and artefacts flow through the system
- Drawn as:
 - Graph with people/work roles as nodes
 - Also databases and other systems
 - Directed arcs for flows between nodes
 - Labelled with what is flowing

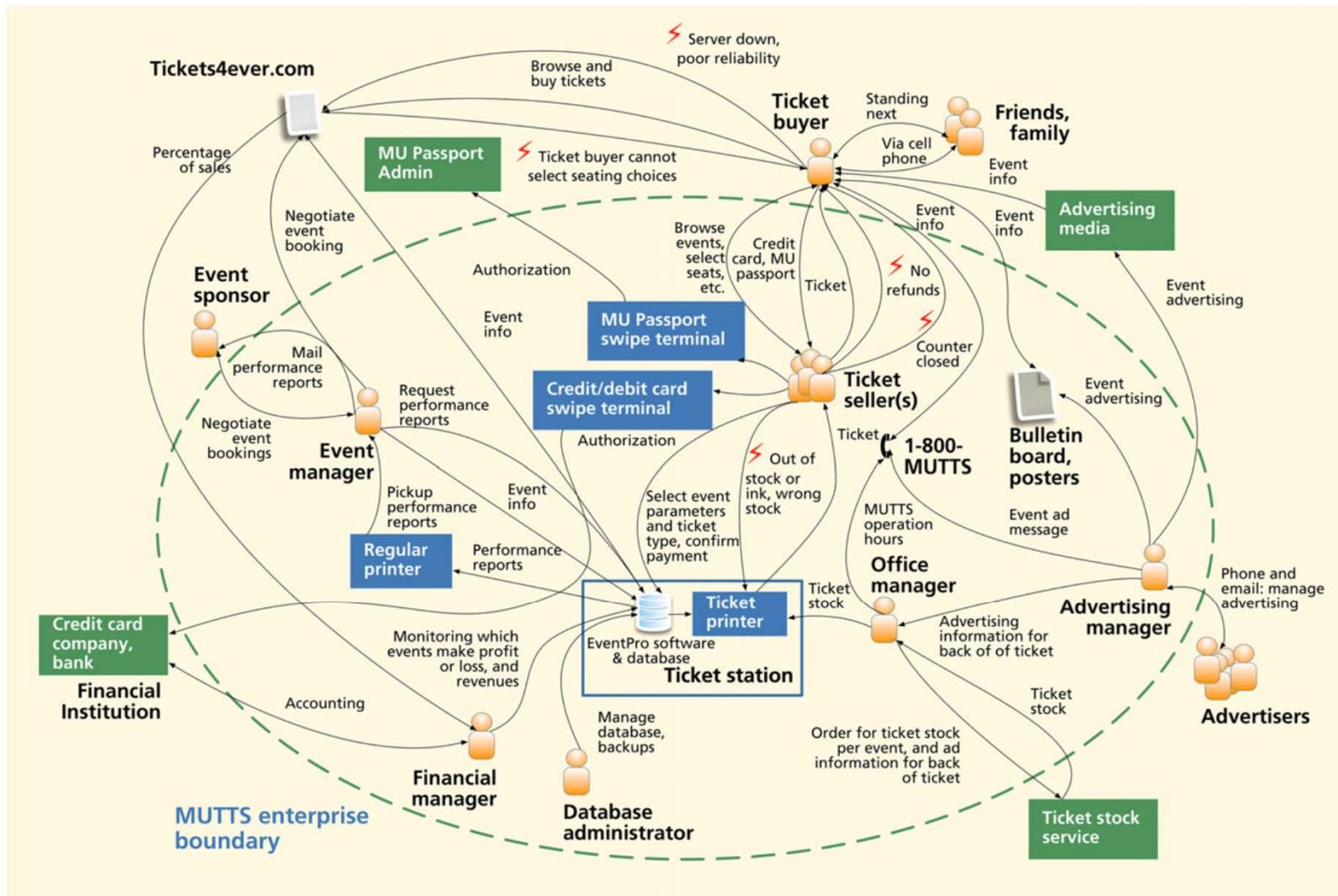
Flow Model – Early MUTTS



Flow Model – Refined MUTTS

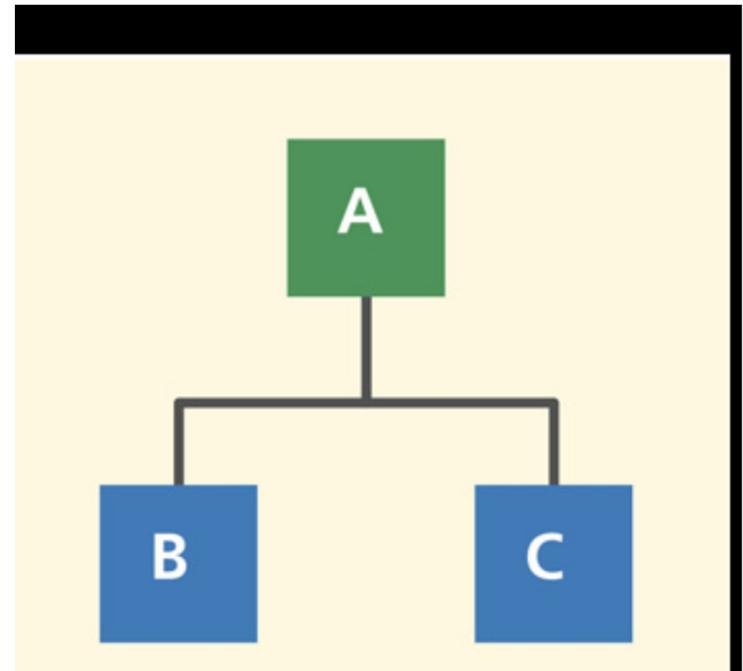


Flow Model – Final MUTTS

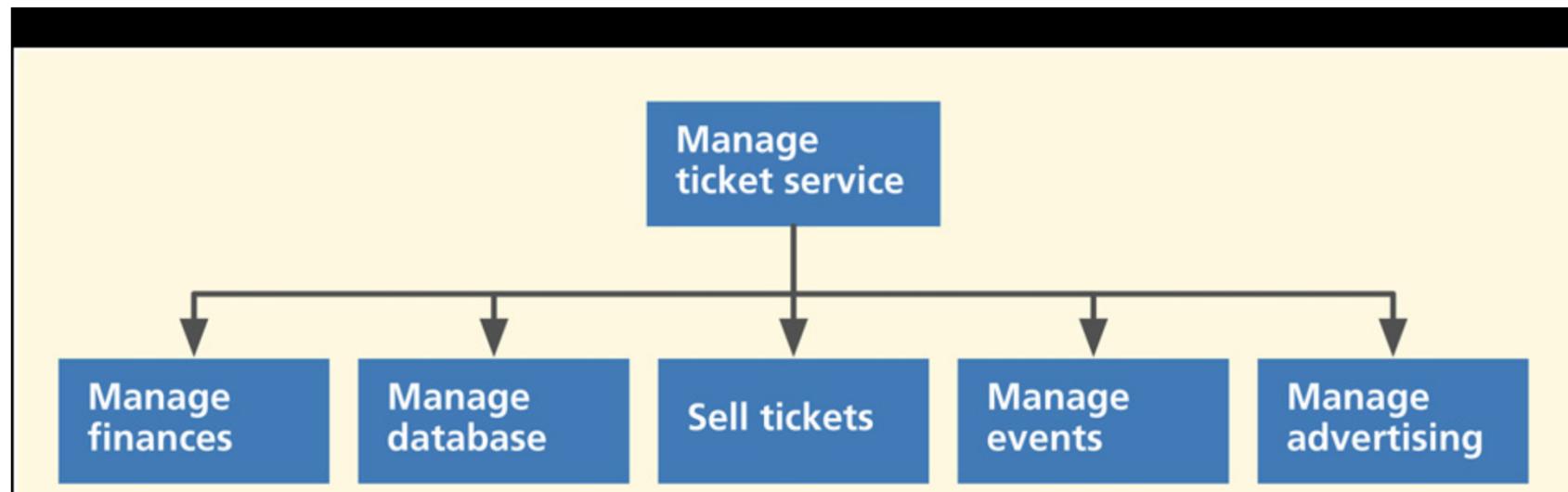


Task Structure Models

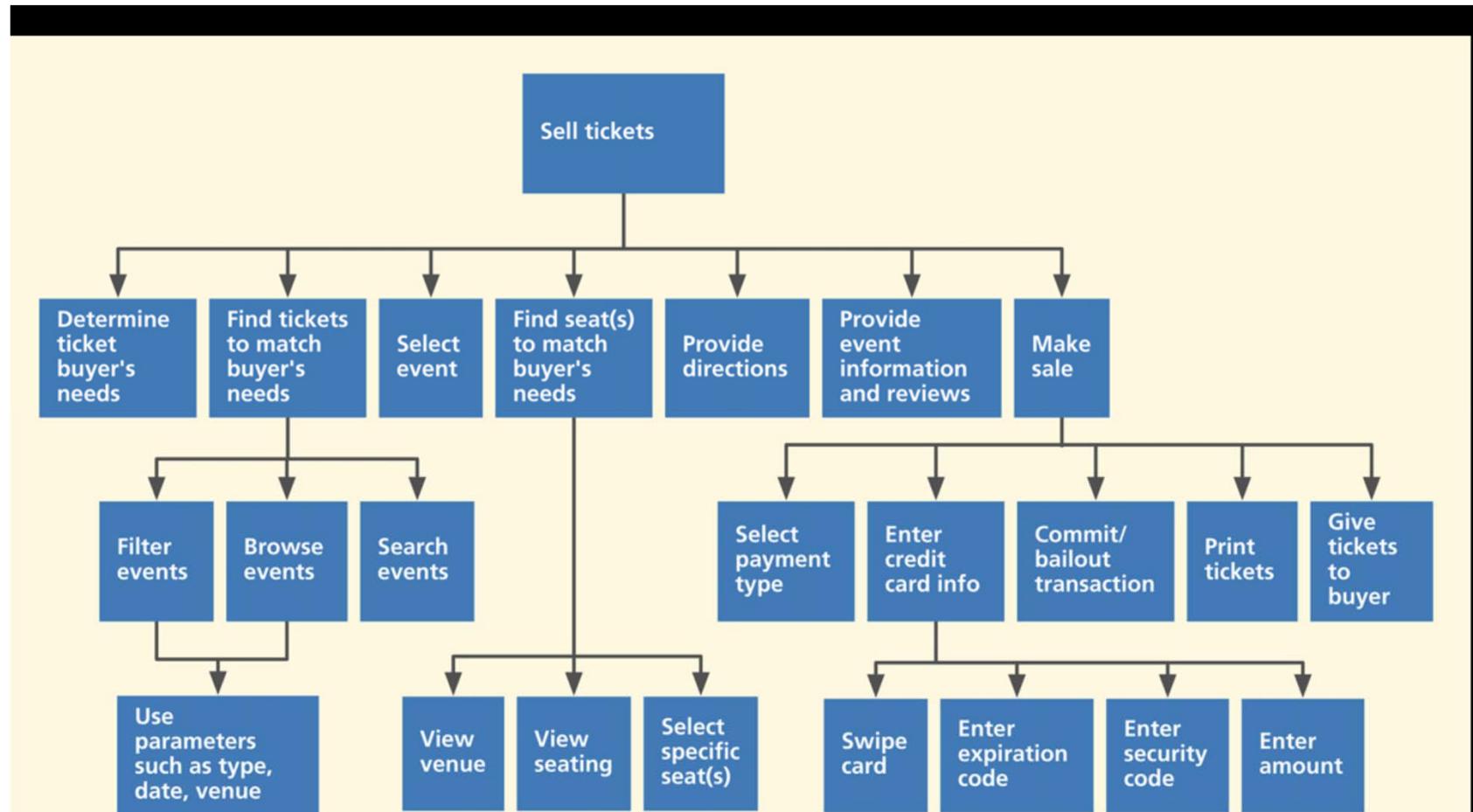
- Represent what users do (task) or can do
- A hierarchical task inventory with relationships between tasks
 - What tasks and actions are possible
 - A checklist for completeness of the emerging design
- Tasks and subtasks
 - If doing task B then also doing A
 - Write as <action><object>
or <verb><adjective><noun>
 - No temporal implications



Task Structure Models - MUTTS



Task Structure Models – MUTTS detail



Task Sequence Model

- Step-by-step description of how a user performs a task
 - Often in swim-lanes for users/systems
- Link with scenarios

Scenarios

- Scenarios

- A description in 'plain English' of a typical task
- It describes
 - The basic goal
 - The conditions that exist at the beginning of the task
 - The activities in which the persona will engage
 - The outcomes of those activities

- Paired with a persona
- We pair with a PACT structure
 - **P**eople
 - **A**ctivities
 - **C**ontext
 - **T**echnology

Scenario context / limits

- A scenario should be 'situated' with one or more of your personas
 - You visualise Suzie being the end user working through that scenario
 - How do you interpret the Scenario differently if it starts
 - 'The guidance counsellor'
 - 'Suzie'
- A scenario should specify the interface details as little as possible
 - They are much more about what's getting done as compared to *how* the user is manipulating the system to do it
 - A good design will be one that makes the scenario's task activity natural and efficient for our persona

Scenario example

Finding the entry requirement for a BE(Software Engineering)

PACT Analysis

People: Suzie (guidance counsellor)

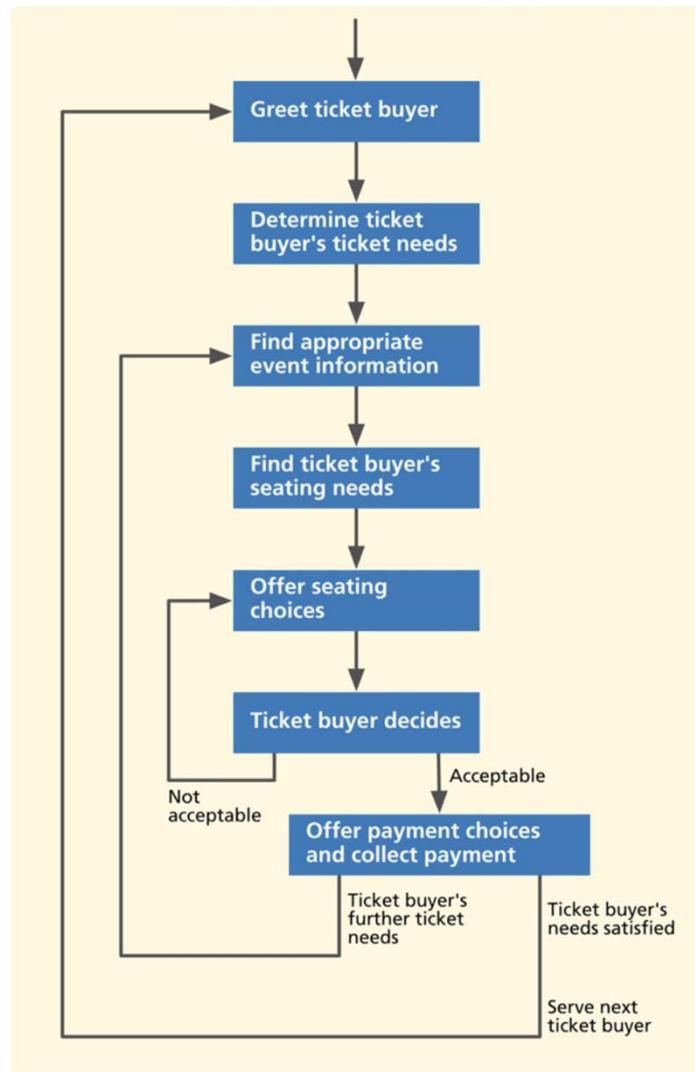
Activities: Navigating the UoA website by following links to the required information

Context: School classroom along with an interested student, an independently managed activity

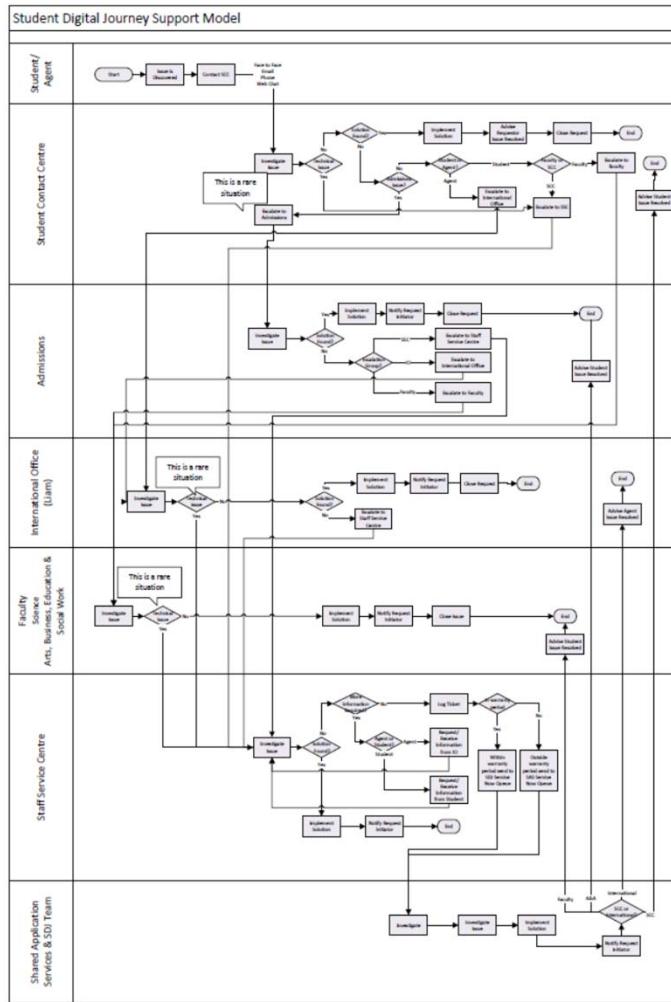
Technology: Internet Explorer on a secondary school desktop

Scenario: A student asks the guidance counsellor for help in checking if they have the right courses to take a BE(Software Engineering). The counsellor starts from the UoA main screen and navigates to the study area, identifying and following links to undergraduate study options, then to a list of programmes, through to the BE for its information and to the 'Software Engineering' major. From there identifying and navigating through to the guide for school students.

Task Sequence Model - MUTTS



Task Sequence Model – UoA Student Digital Journey



Artifact Model

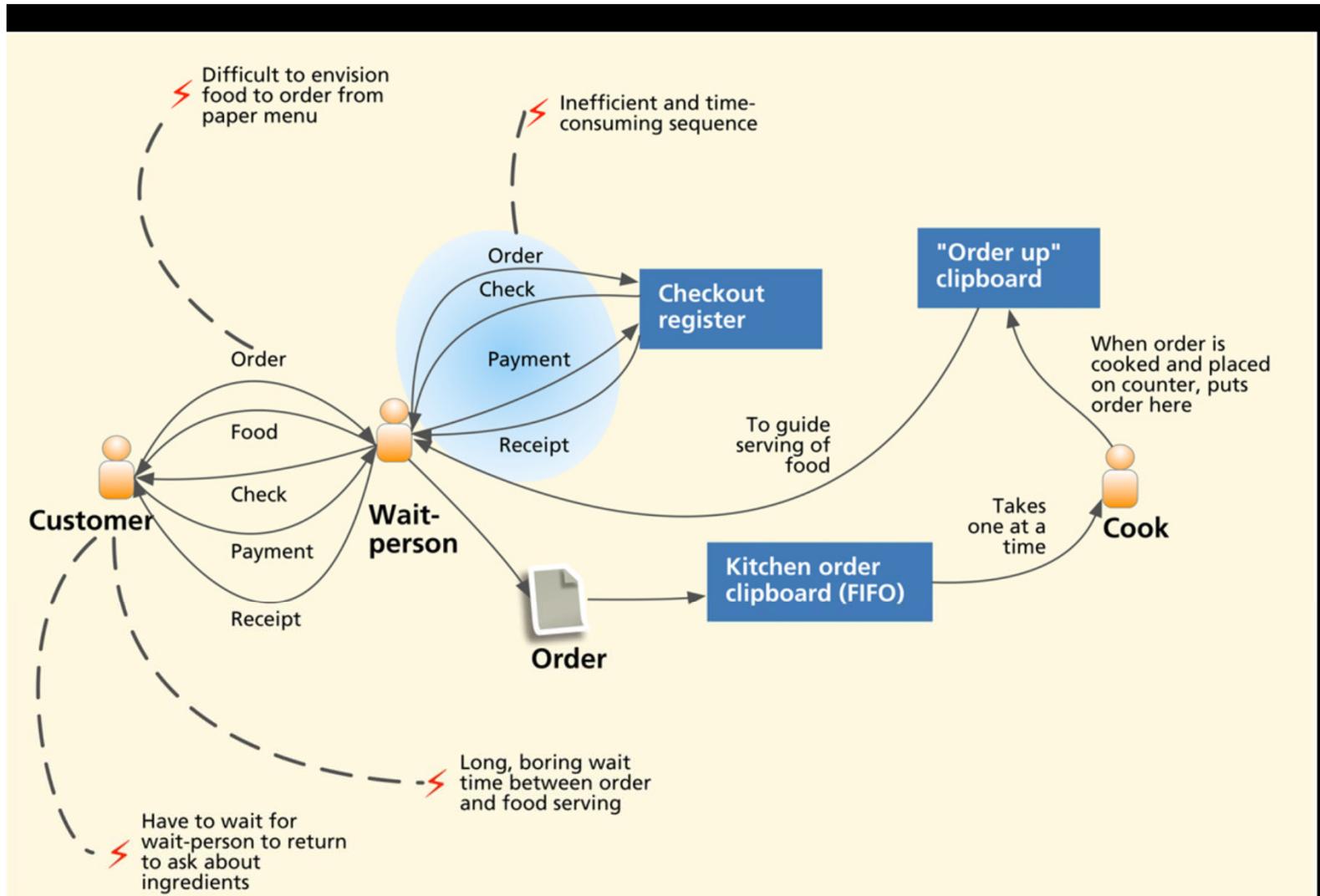
- Artifacts users employ, manipulate and share as part of their work practice
- For example a collection of:
 - Work practice forms, sketches, props, memos, email messages, correspondence templates, product change orders, order forms, receipts, forms, templates, photos, etc, etc.

Artifact Model - Restaurant

Guest Check			
TABLE NO.	NO. PERSONS	CHECK NO.	SERVER NO.
B11	2	732289	Candy
BAC 20M		369	
APP w/w (dry)			
Cham 2x (soft) Grits BIS		379	
TAX		2X OF NK	
Thank You - Call Again			
<small>5632 WITH GUEST RECEIPT-NATIONAL CHECKING CO., ST. PAUL, MN</small>			
GUEST RECEIPT			
NO. PERSONS	DATE	CHECK NO.	AMOUNT
732289			

Guest Check			
CHECK NO.	SERVER NO.		
2293	Candy		
<small>THANKS FOR DINING AT ROANOKE'S AWARD WINNING NEIGHBORHOOD RESTAURANT CLERK: #01 TIME: 10:40 NO. 144552</small>			
<small>3632 WIT</small>			
GUEST RECEIPT			
NO. PERSONS	DATE	CHECK NO.	AMOUNT
732293			

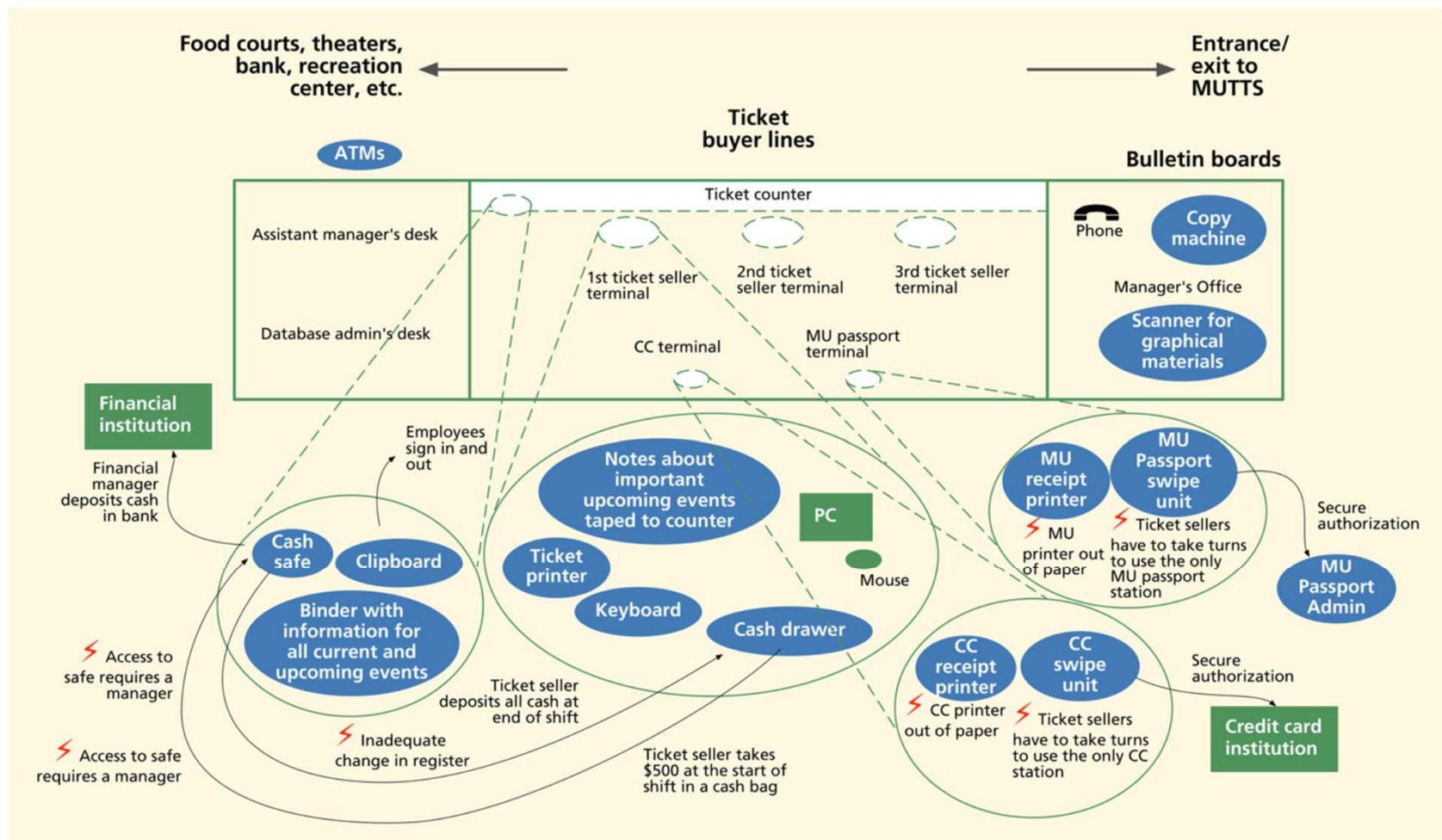
Flow Model with Artifacts - Restaurant



Physical Work Environment Model

- Layout of work environment
 - Floor plan
 - Where people are located and move to
- Location of furniture, equipment, communication connections, work stations, customer counter, etc.

Physical Work Environment Model - MUTTS



Information Architecture Model

- Details of information and its structure
 - Fields and data types
 - Leads to data model
- E.g., for MUTTS
 - Event name.
 - Event type.
 - Event description.
 - Range of dates event is occurring.
 - Ticket costs:
 - Seat types and costs.
 - Reserved status.
 - Venues:
 - Location.
 - Capacity.
 - Directions to venues.
 - Video trailers.
 - Photos.
 - Reviews.

Social Model

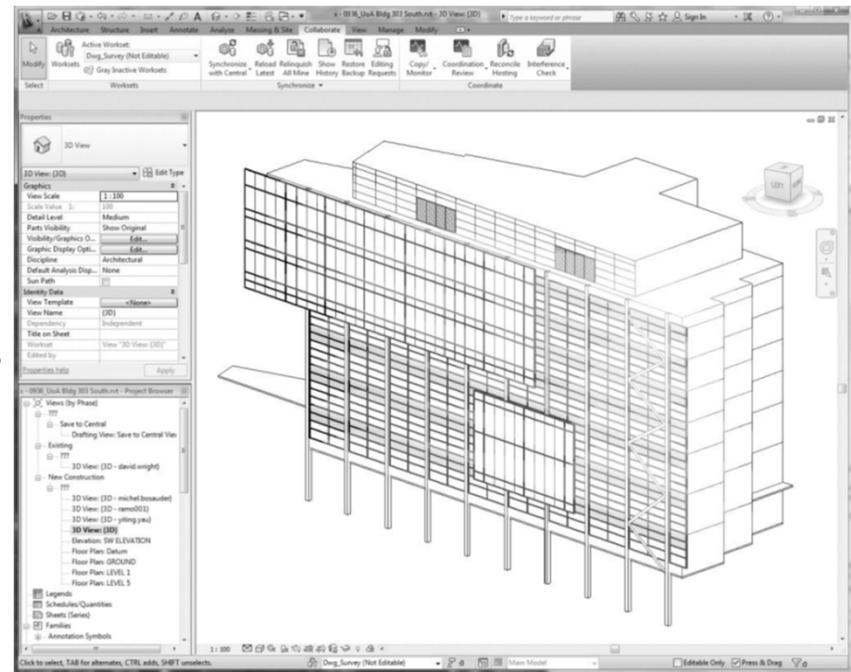
- Only for complex and problematic social and cultural interactions
- Capture culture of a shared workplace
 - Identify kinds of issues, pressures worries and concerns
- E.g., for MUTTS
 - Ticket buyer:
 - Feels pressure:
 - From those in line to get done fast.
 - To get good seats for popular events.
 - Worries about:
 - The system completing the transactions correctly.
 - Losing the personal service I like so much if it's changed to a kiosk.
 - Losing my tickets or my money if the system has an error.
 - Losing money due to the no-refund policy.
 - Experiences barriers to work in the form of:
 - Noise and distraction of public location interfere with thinking and decision-making.
 - Can't see all the choices upfront.

Summary

- A wide range of models to document different aspects of Usage Research Data Modelling
- Personas represent archetypal users
- Scenarios represent capture typical tasks for a persona to be applied to

Multi-choice - Scenario

The design of complex engineered products, such as a building, require sophisticated software tools that are able to capture the geometry as well as detailed attributes for all of the objects that comprise the engineered product. Modern computer-aided design tools have thousands of functions available to the user which have to be accessible from the GUI (the picture shows the Computer Science building design in Revit).



Multi-choice

To test a new layout of functions in the computer-aided design tool you create a persona for a primary stakeholder. The best archetypal user for this would be:

- a) The contractor who installs the lights
- b) The client who approves the finances for the building
- c) The architect who designs the building
- d) The HCI expert who designs the GUI