Good afternoon!

- quick introduction to business process analysis
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What is a “process”?

- the movement of data, goods, or services from a supplier to a receiver
Why engage in analysis?

- we want to know what we do
  - need: documentation; training materials
Why engage in analysis?

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- we want to fix a problem
  - need: bug fix; time / money savings
Why engage in analysis?

- we want to know what we do
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- we want to fix a problem
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- we’re going paperless
  - need: translate a paper process into an electronic one
Why...?

- basically, we need to communicate what we do
Because

this could be you
How?

- make the decision to learn
- define scope and target artifact(s)
- interview actor(s)
- sketch the big picture
- verify with process owners
- document
SIPOC

- source
- input
- process (composed of many tasks)
- output
- customer/recipient

* [footnote]
pause

how are we doing?
Anatomy of a Task
Anatomy of a Task
Anatomy of a Task
sketch - for task list
sketch - for context
## Goal: Task List

<table>
<thead>
<tr>
<th>Reference #</th>
<th>Actor</th>
<th>Predecessor</th>
<th>Input</th>
<th>Task</th>
<th>Output</th>
<th>Successor</th>
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</thead>
<tbody>
<tr>
<td>PBJ 9.00</td>
<td>baker</td>
<td>PBJ 8.50</td>
<td>decision: haz bread? = no</td>
<td>make bread</td>
<td>bread</td>
<td>PBJ 10.00</td>
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<td>PBJ 10.00</td>
<td>butterer</td>
<td>PBJ 9.00</td>
<td>bread #1</td>
<td>make toppings</td>
<td>peanut butter on one side</td>
<td>PBJ 11.00</td>
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<td>butterer</td>
<td>PBJ 10.00</td>
<td>bread #2</td>
<td>put peanut butter on the bread</td>
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<td>butterer</td>
<td>PBJ 13.00</td>
<td>bread, jam</td>
<td>put jam on the bread</td>
<td>jam on other side</td>
<td>PBJ 13.00</td>
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<td>bread, topping</td>
<td>put alternate topping on the bread</td>
<td>peanut butter on one side</td>
<td>PBJ 13.00</td>
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<td>PBJ 13.00</td>
<td>butterer</td>
<td>PBJ 14.00</td>
<td>topped bread</td>
<td>assemble sandwich</td>
<td>assembled sandwich</td>
<td>PBJ 14.00</td>
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<tr>
<td>PBJ 14.00</td>
<td>butterer</td>
<td>PBJ 9.00</td>
<td>assembled sandwich</td>
<td>cut sandwich in half</td>
<td>final</td>
<td>PBJ 115.00</td>
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</tbody>
</table>

etc.
goal: context diagram

requestor
- SELECT BREAD (KITCHEN)
- SELECT TOPPINGS (SYSTEM)

supplier
- GATHER INGREDIENTS (REFRIGERATOR)
- GATHER TOOLS (KITCHEN)

artist 1
- CONFIRM TOOLS (KITCHEN)
- SPREAD PEANUT BUTTER ON BREAD (PLATE)

artist 2
- MAKE TOPPING(S) (KITCHEN)

jammer
- SPREAD JELLY ON BREAD (PLATE)

baker
- MAKE BREAD (KITCHEN)

Hazard?

Devour Messily (PLATE)
don’t panic

there’s time
Your tool belt
eyes on the goal

- what are you going to display?
  - systems interactions
  - sequence of tasks
  - tasks, teams, relationships

- pick a display appropriate to the data
  - process flow diagram
  - swimlane
  - task matrix
process flow

SImPLE

1. General Partner sends email to MTLP_pf with documents attached
   a. decision: who opens the email?
2. Nathan opens the mail, labels it “Nathan in Process”
3. (N) opens attachment; Capital Account Statement
   a. marks up the document [highlight the title, date, investment, etc.]
        the % is
   b. adds custom stamp
4. go into Private
   a. finds the security
5. returns to disc
   a. if doc is an xlsx file, saves as PDF
6. open related email, make the same changes
7. combine all PDFs into the same PDF
8. save PDF to disc in the appropriate folder

COMPLEX

4. (N) open up excel sheet with the partner site passwords
5. visits the site, logs in
6. opens all documents for each of many securities, repeating the same save tasks:
   a. open disc e.g., Capital Statements, Financials
   b. save document to working folder (Nathan’s is named “invol”); as PDF
   c. make annotations, markups
   d. if doc has multiple market values or subclauses, then:
      i. open I = Private Investor [individual valuation worksheet]
      ii. add excel workbook
      iii. set page break
      iv. save
      v. print to PDF
      vi. mark up PDF
6. go into Private
   a. finds the security
   b. enter the valuation and % in retirement, welfare benefit plan
7. continue from (6.) above
process flow
swimlane
swimlane
swimlane
swimlane
hybrid
### Task Matrix

- **Submit LDR**
- **notify the office that the end date is approaching**
- **商业地产 the office of a termination**
- **complete off-boarding for fired employee**
- **check Club Sports Council that there is an opening**
- **Submit request for posting, job description, search plan**
- **post to unit-specific target if appropriate**
- **complete the temporary request form**
- **Post position & coordinate search on the HR website**
- **Post position & coordinate search at HR**
- **Charge the committee**
- **Scheduling interviews, interview candidates, check references**
- **Select the candidate**
- **Attend for the position**
- **Submit web application to HR**
- **Apply through HR**
- **Skill Assessment or interview**
- **Provision of minutes to unit**
- **Call appraisals/applicants to hire them**
- **Make the offer to the unit**
- **Notify UPR of the hire**
- **Perform appropriate background check (e.g., CDR/ID)**
- **Sign on hire**
- **Perform CPD, PEO, First aid certification check where applicable**
- **Draft letter of appointment (LOA)**
- **Send letter of appointment**
- **Notify all other applicants**
- **Complete and submit a Temps hiring paperwork**
- **Complete Temps process paperwork**
- **Send paper to student**
- **Employee complete Temps paperwork (employee)**
- **Complete UA**
Swim-lane diagram task descriptions:

1a. There are two ways of gathering data in the field - manually and automatically.
1b. If the data is collected manually, the Pumper observes flow rates (oil, gas, and water), pressures, and temperatures manually by looking at paper charts and recording these readings on paper or laptop.
1c. Using information gathered manually, the Pumper performs well testing and oil measurement using temperature and pressure readings at the well head.
1d. Using information from well tests and data gathered manually, the Pumper creates run tickets (i.e. information that is obtained after measurement and testing of crude oil that is used as the basis for all payments for oil delivered from the lease), which are sent to the Production Accountant/Analyst.
2a. If the data is collected automatically, the Instrumentation Technician captures flow rates (oil, gas, and water), pressures, and temperatures using field data capture (FDC) systems. This data is then sent to the Production/Field Engineer for approval. (Responsibilities of the Instrumentation Technician: 1) is responsible for maintaining automated reporting systems such as SCADA and DCS; and 2) is in charge of maintaining data in exploration and production databases.
2b. After collecting automated data, the Instrumentation Technician measures the volume of oil, gas, and water using temperature and pressure readings at the well head and runs a series of tests for temperature, density, and basic sediments and water content (BSW) on these measured quantities.
2c. The Instrumentation Technician uses the information obtained after measurement of oil, gas, and water and well testing to create run tickets, which are sent to the Production Accountant/Analyst.
3b. The Facilities Engineer performs regular inspections of the machinery in the field. The Operator's Facility Engineers are responsible for designing and evaluating the surface equipment required to produce oil and gas.
3c. Based on inspections, the Facilities Engineer decides if machinery maintenance is required.
3d. If maintenance is required, the Facilities Engineer will schedule maintenance activities within his Authorization for Expenditure (AFE) limit.
3e. Based on maintenance, the Facilities Engineer also checks if machinery needs to be replaced.
3f. If replacement is needed, the Facilities Engineer obtains permission for replacement.
3g. After obtaining permission for replacement, the Facilities Engineer calculates the total cost for replacement and sends it to the Joint Venture Accountant. Different types of oil and gas wells require different facilities, so the Facilities Engineer's involvement and responsibilities tend to vary (e.g. onshore, offshore, subsea, plants, etc.).
4c. Based on the data received from the Pumper and/or Instrumentation Technician, the Production/Field Engineer verifies the accuracy of this data and approves it.
4d. Once the data is approved, the Production/Field Engineer creates daily reports of raw data such as temperatures, pressures, fluid flow rates, and etc. and/or transactional data (data specified in joint operation agreements).
4e. Using the data from daily reports, the Production/Field Engineer creates workover reports and production logs. The workover reports include any operations performed on a well to restore or increase production. The Production/Field Engineer also monitors production to ensure optimal production rates are achieved, as well as recommends and completes workovers to fix problems at the well.
4f. After analyzing the reports, logs, and any other information, the Production/Field Engineer uses information from them to design the well completion (i.e. detailed well completion plan describing where the well is to be perforated, types of completion, and where the packer and tubing is located). From this data and adjacent well performance, a monthly forecast is generated.
4g. The Production/Field Engineer will forecast monthly production estimates based upon information from the Reservoir Engineer, if the Reservoir Engineer is assigned, and/or based upon well performance and any other pertinent well or nearby field information.
5d. The Reservoir Engineer receives the approved data from the Production/Field Engineer and analyzes the well and/or reservoir (i.e. a collection of wells) performance using well tests. The Reservoir Engineer checks or calculates reserves, performs simulations, and recommends development plans (i.e. changes in placement and possible increase in the number of wells.)
5e. The Reservoir Engineer determines whether the well tests are valid. If invalid, the Reservoir Engineer performs well tests to analyze reservoir and well performance.
5f. If the well test is valid then the Reservoir Engineer uses the results of the test for building reservoir simulation models. These models will determine whether the reservoir is worth exploiting further.
5g. Based on the simulation model, the Reservoir Engineer conducts reserves analysis to determine how much oil or gas is left in the reservoir and how much more oil and gas can be produced.
But why?
save time: don’t bother

oh noes
Why are we doing this?

- we want to know what we do
  - need: documentation; training materials
document a how-to

• for whom?
who is your audience?

• end-users -- so they can learn how to do their work

• auditors -- so they can provide oversight

• managers -- so they can verify a process

• all of the above
document a how-to
document a how-to

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document a how-to
Why are we doing this?

- we want to know what we do
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- we want to fix a problem
  - need: bug fix; time / money savings
fix a problem

• what’s wrong?
take this

you may need it
what’s wrong?

- incoming supply chain
- input integrity
- time bounds
- number of systems interactions/collisions
- data flow compromises the workflow
Connect the dots:
*If a task’s output condition does not meet the input condition for another task... your process may be broken.*
Check for overload: If more than one task or process is taking place in the same system, at the same time, the system may be taxed.
Traffic control:
If an end-to-end process is taking too long, look at:
1. handoffs - how many users touch data as it traverses a process?
2. notifications - how are receivers made aware that they have new work?
3. exceptions - each variation adds decisions and time to a process
go paperless

* but why?
why go paperless?

- I can’t read your handwriting.
- The piece of paper went missing.
- It kills fewer trees.
  - 10 MM pages = 2,500 trees, 56,000 gallons of oil, and 450 c.yds of landfill.*

go paperless
go paperless
flow comparison: opt 1

SIMPLE
1. General Partner sends email to MITLP_pgf with documents attached
   a. decision: who opens the mail?
2. Nathan opens the mail, labels it "Nathan in Process"
3. (N) open attachment: Capital Account Statement
   a. marks up the document [highlight the title, date, investment, $ in columns]
   b. adds custom stamp
4. go into Private
   a. finds the security
   b. enters the valuation and %s in retirement, welfare benefit plan
5. returns to doc
   a. if doc is an sxe file, saves as PDF
6. open related email, make the same changes
7. coordinates all PDFs into the same PDF
8. save PDF to it: drive in the appropriate folder
   a. save as name comprised of title, investor
   b. mark email as "Nathan Completed"

COMPLEX
4. (N) open up excel sheet with the partner site passwords
5. visits the site, logs in
6. opens all documents for each of many securities, repeating the same save tasks:
   a. open doc, e.g., Capital Statements, Finances
   b. save document to working folder (Nathan’s is named “trash”) as PDF
   c. make annotations, markups
6. if doc has multiple market values or subcategories, then:
   i. open I=Private Investor [individual valuation worksheet]
   ii. fill excel workbook
   iii. set page break
   iv. save
   v. print to PDF
   vi. mark up PDF
7. go into Private
   a. finds the security
   b. enters the valuation and %s in retirement, welfare benefit plan
8. continue from (6.) above
flow comparison: opt 1+
warning

* you’re not the expert; the first actor interview will only uncover 70% of the process

* Steve Buckley
warning

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- interviews and questions may activate the departmental “immune response”*

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* timing isn’t everything: focus on accuracy

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* Steve Buckley
warning

- you’re not the expert; the first actor interview will only uncover 70% of the process
- interviews and questions may activate the departmental “immune response”*
- timing isn’t everything: focus on accuracy
- improvements may not improve everyone’s work
- a system will not solve a business process problem

* Steve Buckley
go forth and document

may the kittens be with you
photo credits

- kitten in paper: http://www.cutestpage.com/pictures/Paper_Shred_Cat.htm
- onoes kitten: http://www.flickr.com/photos/intercer/7694240716/
- fierce kitten:
- kitten in a field: http://www.clevelandseniors.com/family/cat-newyear.htm
- swimlane 2: http://performanceexpress.org/0709/
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