Contrast Systems at Start-ups vs. Multi-National Firms

After completing this activity you will be able to:

- List a differentiating characteristic of systems at smaller vs. larger firms.
- State a benefit of process decomposition.

**Step 1: Prepare Individually**

What are 3 to 5 major steps involved in opening a new business location?

- Rent a space
- Order inventory
- Hire employees
- Marketing campaign
- Set up space (furniture, computer, etc.)

**Step 2: Instructor leads full class discussion of answers**

**Step 3: Prepare Individually**

Regardless of company size, what are 3 to 5 major steps involved in hiring a new employee?

- Define job description
- Post the job
- Screen resumes
- Interviews
- Background check
- Offer
- On-boarding
- Training

**Step 4: Discuss in groups of 2-3**

Compare answers from Step 3. Provide a refined answer to: What are the major steps involved in hiring a new employee?

See above

**Step 5: Instructor leads full class discussion**

**Step 6: Research on web and discuss in groups of 2-3**

Consider two firms:

- Manayunk iPhone Repair (MiR) is "a full service iPhone repair center. Most repairs are finished while you wait. We service the iPhone, iPad, iPod, and Mac Laptops."
- Geek Squad (a Best Buy subsidiary) - multi-national company offering multiple computer-related services for residential and commercial clients: in stores, on-site, via Internet/remote access, phone, and emergency on-site support.

For each of the major steps involved in hiring a new employee (see step 4), identify the job title and/or department involved in that step (complete table below).
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<thead>
<tr>
<th>Step in Process</th>
<th>MiR</th>
<th>Geek Squad</th>
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<tr>
<td>Define job</td>
<td>Manager/Owner</td>
<td>Manager</td>
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<td>HR</td>
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<td>Onboarding</td>
<td>Manager/Owner</td>
<td>HR assistant</td>
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<td>Training</td>
<td>Tech or Manager</td>
<td>Training Dept</td>
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</table>

**Step 7:** Instructor leads full class discussion

**Step 8:** Answer these questions (individually)

1. What is one thing different about systems in small firms and large firms?
   
   ![Limited resources]

2. Would you rather work for a start-up firm or a large established one? Why?

3. Thinking about this exercise as a whole, what are some potential benefits of decomposing a process into smaller steps?
   
   - **Understand it better**
   - **Clarify roles**
   - **See potential inefficiency**

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**Step 7:** After you confirm your name and today's date are on pg. 1, submit completed activity sheet
Describe Role of Systems in Business Career

After completing this activity you will be able to:

- Differentiate between a Business Analyst and a Systems Analyst
- Draw an input-process-output-feedback diagram

**Step 1: In small groups (2-3 students).**

Define business analyst: Someone who analyzes an organization or business domain and documents business or process or systems, assessing the business model or its integration with technology.

Define systems analyst: Someone who analyzes, transforms, and ultimately resolves the business problems with the help of technology.

**Step 2a: Discuss as a class.**

Step 2b: Instructor describes Input – Process – Output (I-P-O) models

**Step 3: In small groups (2-3 students).**

Your instructor will assume the role of a subject matter expert (SME) for a business process (i.e. accounts payable, processing employee expenses, etc.). Assume the role of a business analyst and interview the SME to learn how the SME does their job. Draw an IPO diagram that documents the inputs, basic process and outputs for this task.

![IPO Diagram]

**Step 4: Students will be called upon at random to discuss.**

Discuss the IPO diagram as a class. As a class, brainstorm how a system could be designed to make the process more efficient, eliminate errors or create value in other ways for the organization.
Step 5: Answer four short-answer questions (individually)

1. One difference between a business analyst and a systems analyst is:
   
   **BA do not typically dive into the technical aspect of the task at hand.**

2. Which role is more appealing to you? Why?
   
   BA or SA?

3. One benefit of proactively managing your digital identity through an ePortfolio is:
   
   Ensure all information is accurate, appropriate and appealing for my future employer.

4. Draw an I-P-O Model for preparing your ePortfolio.

   ![I-P-O Model Diagram]

   - Input
     - Name
     - Photo
     - Career interest
     - Resume
   - Process
     - Create Avatar
     - Create Portfolio
     - Create Site
   - Output

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Step 6: Rate this activity (individually)

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Rating (1 to 5)

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Step 7: Submit completed activity sheet
Systems Analysis: Stakeholder Analysis

After completing this activity you will be able to:

- Identify stakeholders in an example IT project.
- Assess the value of stakeholder analysis.

Step 1: In small groups

From http://stakeholdermap.com/stakeholder-definition.html

A stakeholder is anybody who can affect or is affected by an organization, strategy or project. They can be internal or external... Stakeholders are crucial to the success of your project. Neglect them and they will actively work against you. Manage them well and they will actively promote you and your project. The first step in stakeholder mapping is to identify your stakeholders.

Consider the following project description:

The Owl Business School is considering a new instructional technology that works in classrooms with computers (e.g., netbook, laptop, and desktop computer classrooms/labs). If assessing the value of the proposed system, what stakeholder perspectives should be considered?

List 3-5 stakeholders:
1. Students
2. Professors
3. IT Dept.
4. Dean office
5. Finance Dept.

Step 2: Discuss as a class

Step 3: In groups

Of the identified stakeholders, pick 3 to consider in more detail. Considering each perspective individually, assess the pros and cons of this software:

The EduTrack Scholar application is the ultimate student accountability and learning enhancement software. It provides comprehensive data collection, analysis and reporting to not only assess student comprehension but also to uniquely incentivize student engagement. By logging, capturing, and examining every keystroke, eye movement, and mouse click, an instructor can immediately identify engaged, distracted or disruptive students. The software even integrates with social media monitoring and electronic grade systems to seamlessly assess student performance.

In the grid below list 2-3 pros and cons each for your 3 selected stakeholders.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Pros</th>
<th>Cons</th>
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</table>
| Student     | - exciting new technology  
               - all info in 1 spot  
               - stressor               | - invasion of privacy  
               - learn new technology  
               - additional workload to analyze data               |
| Professor   | - ability to monitor  
               - all info in 1 spot               | - learn new technology  
               - additional workload to analyze data               |
| IT Dept     | - learn new technology  
               - job security               | -                                                                 |

Assuming this software is implemented, what policies would you recommend regarding:

(a) informing students of the software capability,

Privacy policy ' need to consent or opt out

(b) providing options for opting-in or opting-out of usage, and

(c) scope of data sharing and length of data retention?

List who has access and how long to retain data

(clearly define)

**Step 4: Discuss as a class**

**Step 5: Answer these short-answer questions (individually)**

1. What is one way that stakeholder analysis is a useful tool?

   Ensure a better success with stake/program implementatin

2. If you were on a student technology advisory board, would you support an application like this?

   The majority of students answered: "not supportive"

3. What safeguards, if any, would be required for you to feel comfortable with this application?

   1) data not stored or used for future classes  
   2) confidentiality agreement

**Step 6: Rate this activity (individually)**

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**Step 7: Submit completed activity sheet**

Information Systems in Organizations - Activity Worksheet
Systems Analysis: Process Decomposition with Swim Lane Diagrams

After completing this activity you will be able to:
- Interpret a swim-lane diagram
- Construct a simple swim-lane diagram

Step 1: Individually

Reference the swim lane diagram shown on screen. Prepare 3 questions that can be answered with the diagram: (e.g., what happens before/after X, who does Y)
1. Who does the invoicing? (A: Accounting)
2. What happens if the customer has no credit available? (A: Sales notify customer)
3. What is the last step? (A: Post payment)

Step 2: In small groups.

Ask other group members your questions. Reach a consensus on the correct answers.

Step 3: In small groups.

Create a swim lane diagram that describes the hiring process in a large company covered during the Unit 1 activities (hiring process in a small versus large company). Describe the steps in the process using the 3 following actors: Human Resources (HR) department, Hiring manager and the on boarding/training department.
Step 4: Draw diagram on board and discuss as a class

Step 5: Answer three short-answer questions (individually)

1. In which situations is it useful to draw a swim lane diagram?
   - To create benchmark materials
   - In problem solving, i.e., identify redundancies, problem areas, or inefficiencies in a business process
   - To clarify steps in a process and who is responsible for each one

2. Describes the main elements included in a swim lane diagram:
   - ○: circle for start & end
   - ☐: rectangle for activity
   - □: diamond for decisions
   - ◊: arrow indicate the flow
   - □: cylinder for stored data

3. Do you think you could utilize swim lane diagrams in some of your other classes? If so, what classes and how would you use them?

Step 6: Rate this activity (individually)

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Step 7: Submit completed activity sheet
Systems Analysis: Entity Relationship Diagrams

After completing this activity you will be able to:

- Interpret an entity relationship diagram
- Construct a simple entity relationship diagram

Step 1: Individually

Reference the entity relationship diagram shown on screen. Prepare 3 questions that can be answered with the diagram:

1. Which relationship is covered? (no process) A: buying
2. What are the attributes? A: item type, item price, item source
3. What are the 'entities'? A: shopper, item

Step 2: In small groups.

Ask other group members your questions. Reach a consensus on the correct answers.

Step 3: In small groups: consider the following scenario

TempleBank runs a free daycare service for all its employees. The company wants to more easily identify employees who use the service and also needs to parents where to pick up their kids.

- Each employee can have multiple children enrolled in the daycare center.
- Employees can be described by their employee ID number, first name, last name, phone number and work location.
- Children can be described by their first name, last name, gender, and date of birth.
- Because children are provided with lunch and snacks, it is important to track dietary restrictions (e.g., gluten-free, vegetarian, vegan, food allergies, etc.). Each child is assigned to one of 3 rooms based on age, maturity, and parents' work location.

1. Identify entities (hint: there are at least 3) and relationships among the entities

   - Employee
   - Children
   - Room
   - TempleBank

   use service/day care

   enrolled

   assigned

   TempleBank

2. Identify multiple attributes for each entity.

   - Employee: ID number, first name, last name, phone#, work location
   - Children: first name, last name, gender, date of birth, diet restrictions
   - Rooms: 1, 2, 3

Step 4: Discuss as a class

Information Systems in Organizations - Activity Worksheet
Step 5: In small groups: consider the following scenario

A wedding party DJ to create a database to keep track of their Compact Disc collection. For each CD relevant info includes genre, artist, songs and key information about each song.

A. Identify entities, 3-5 attributes per entity, and relationships
B. Draw a simple entity relationship diagram

Step 6: Draw diagram on board and discuss as a class

Step 7: Answer four short-answer questions (individually)

1. When you think an entity relationship diagram is most useful?
   When creating and manipulating databases (DB design)

2. What do you think are the most common types of errors made when creating an ERD?
   Mixing up entity and attributes

Step 8: Rate this activity (individually)

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Step 9: Submit completed activity sheet
Systems Analysis: Conceptual Architecture Diagram

After completing this activity you will be able to:

- Construct a simple conceptual architecture diagram and ERD

Step 1: Individually – Review the following narrative

In part of MIS2501 – Enterprise IT Architecture, students are challenged to propose innovative products and services that can be delivered through a variety or digital ecosystems. In the spring of 2015 an MIS2501 student, Alex Savon, proposed a new application for the Apple Watch. After doing his research he determined that the accelerometer in the Apple Watch was sensitive enough to detect seizures in a person who has epilepsy and is wearing the watch.

Alex’s proposal was for an application that would detect seizures and measure/report the duration and intensity of the seizure along with the person’s heart rate throughout the event to the person’s physician. In addition, information about this event would be sent via text messages to the loved ones of the person experiencing the seizure. With the detailed information provided by the application, the physician would be able to fine tune the treatment plan including adjusting medications. The end result is better health outcomes and an improved quality of life for the patient. Finally, as a result of the improved health outcomes, patients would need to see their physician less frequently which will result in a significant reduction in health care costs. Due to these financial benefits, the proposal was to provide this service to patients with their health insurance companies paying for the service.

With this use of technology, everybody wins. Patients experience better health outcomes and an improved quality of life and insurance companies reduce costs.

Step 2: In small groups (2-3 students) then discuss as a class.

Discuss the narrative and create a conceptual architecture diagram that describes this system.

Who are the users of this system and what are the interfaces used by each user?

- Patient
- Physician
- Insurer
- Loved ones

Interfaces:
- Apple watch
- Tablet/PC
- Phone

What are the processes that this system needs to support?
- Detect, measure, and report episode
- Analyze Episodes and Adjust Treatment plan

What resources (data) needs to be collected and managed by this system?
- Event data
- Reporting data
Create a conceptual architecture diagram here:

See next pages.

Step 3: In small groups (2-3 students) then discuss as a class.
Create an ERD here that models the data requirements for this new application here:

See next 2 pages.

Step 4: Rate this activity (individually)

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Digital Identity Management

After completing this activity you will be able to:
- State multiple strategies to manage your digital identity.

Step 1: Individually
- Search your full name on Google. If it's a common one, add "Temple" or "Philadelphia" to the search. Of the top 10 links, how many relate to you? What is your top-ranked item?
- Search your name on Google images as well. What kind of pictures of you, if any, show up?

Step 2: In small groups (2-3).
- Share your results.
- Discuss strategies for enhancing and optimizing the search results.

Step 3: Discuss as a Class
- What kinds of things do you want to appear on Google search results under your name? What kinds of things should not be there? (And on social media websites)
- What are strategies for actively managing your online presence?
  - Same pictures, same name, and same headline
  - Engage with people
  - Be professional, be personable

Step 4: Individually
- Search on other’s in your group. Identify in what ways the results reflecting positively or negatively on them.

Step 5: In small groups.
- Help each other enhance your search results.
Step 6: In small groups

Focus on information available publicly on Facebook and LinkedIn. Ask someone in the class who is not connected with you to show you what information is available as a public profile.

Discuss how to improve your public profile. Make changes as appropriate.

Step 7: Individually

- What are 3 ways you can actively manage your online presence?
  1. Find out the social media your discipline uses and start defining your self on it.
  2. Post comments related to your field / engage
  3. Keep it up to date

- Do you think employers are likely to Google your name prior to a job interview? If so, what questions do you hope they'll ask you about your online profile?
  
  Yes

- What is something you learned completing this exercise?

  How to improve my image online

Step 8: Rate this activity

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Step 9: Submit completed activity sheet
Sample Mini-Case Review

After completing this activity you will be able to:

- Improve your ability to work with swim lane diagrams and ERD on the upcoming exam

Step 1: Individually – Read the following narrative

Purchasing an Ad at the Drexel University Student Newspaper – Jeffrey Popoviz

The Triangle, Drexel’s student newspaper, is a weekly publication distributed around Drexel’s University City and Center City campuses. The paper has a readership in the thousands; favored by students, faculty, and visitors of the university. A large portion of the newspaper’s budget comes from advertisements from local businesses. The process by which a business purchases an ad in the newspaper is multi-faceted and requires the effort of a variety of individuals.

First, a customer reaches out to the Sales Manager at the paper, expressing interest in purchasing a full-page advertisement for the following week. One week’s notice is required for all advertisements, as the staff needs time to craft the layout of the paper prior to submitting it to the publisher. The Sales Manager receives the request and creates an invoice in QuickBooks, which is then forwarded to the customer. The Sales Manager also asks the customer for any artwork they may have.

The customer then signs the invoice, sends payment (if acceptable), and emails the artwork to the Sales Manager. With the customer’s response in-hand, the Sales Manager takes the payment and sends it to the Accounting Team. The Accounting Team deposits the payment into the paper’s bank account, and makes note of the receipt in a dedicated Microsoft Excel file. Once the payment is confirmed, the artwork and copy for the ad are approved by the Managing Editor of the paper. If approved, the Editor places the ad into the paper to be printed, and confirms the submission to the Sales Manager. If the ad is not approved, the Managing Editor works with the client to create a new ad.

After the paper is printed, the Accounting Team sends a tear-sheet of the advertisement to the customer.
Step 2: Discuss as Teams (2-3)

Sketch out a swim lane diagram and an ERD that models the narrative:

Step 3: Students will be called upon at random to discuss

Step 4: Rate this activity (individually) and submit completed activity sheet

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ERD

**Client**
- Client name
- Individual contact
- Client ID
- Artwork
- Ad Info
- Payment Information

**Sales Manager**
- Employee Name
- Contact Info
- Paper Information
- Paper Availability

**Student Paper**
- Name
- Employees
- Content

**Ad**
- Ad ID
- Publisher
- Publishing Date
- Copy and Artwork
- Cost

**Invoice**
- Publishing Date
- Paper ID
- Ad ID
- Artwork (optional)
- Cost
- Terms and Conditions

**Printer**
- Printer ID
- Invoice
- Capacity

**Payment**
- Ad ID
- Amount
- Publishing Date

**Editor**
- Employee Name
- Contact Info

Relationships:
- **Client** has **Contacts**
- **Sales Manager** sends to **Student Paper**
- **Ad** prints
- **Invoice** approves
- **Printer** accepts
- **Payment** part of
- **Editor**