



SYSTEM DESIGN IE 477-78

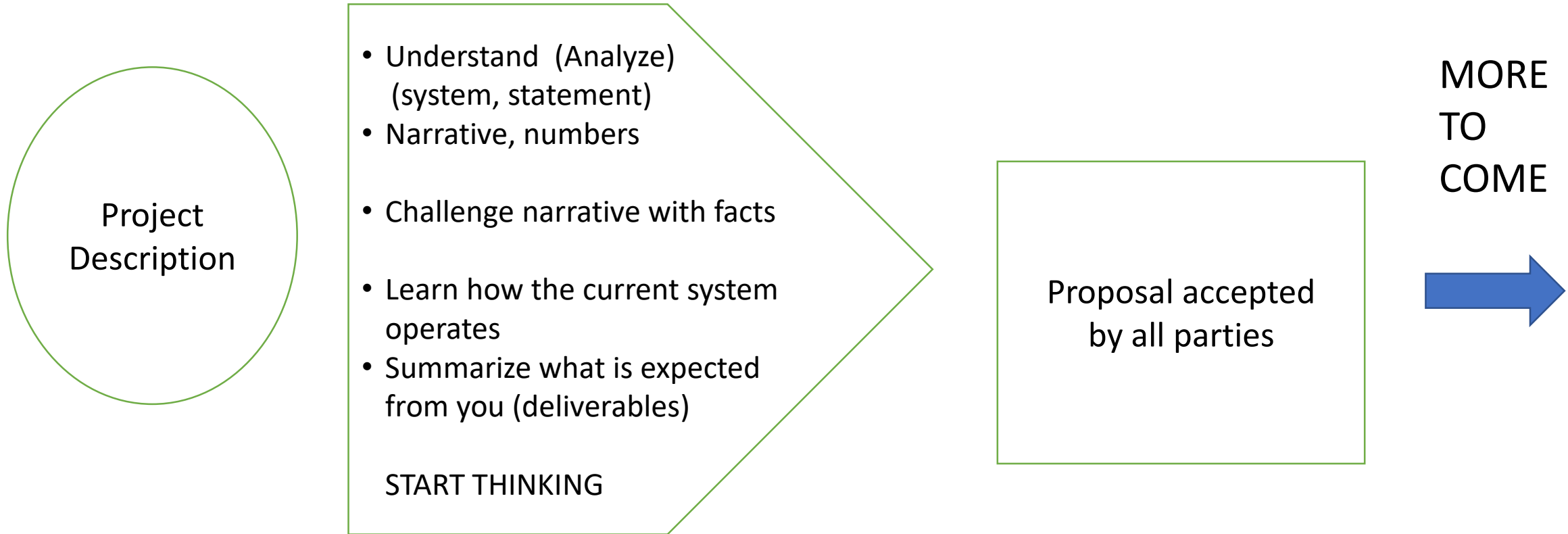
More suggestions

Fall 2021

Projects assigned. What's next?

- You should have contacted your AA and met or scheduled a meeting.
- On Kick-off meetings
- Before the kick-off meetings
 - Go over previous years' Project booklet – to understand and appreciate the end product
 - Review related course material
 - Ask your AA on what to overview for your project
 - Read the material on the course WEB site
 - Discuss about how to proceed within the group – professionalism
- During the kick-off meeting
- *All problems are unique – requires learning and understanding*

Project work is a journey



Description of the system

General + Project specific information about the organization – Narrative (organizational structure, ownership, etc.)

- Numeric information - to identify the relatively more important issues around the problem
 - Examples (general information): % of the market, number of products, number of possible customers (markets)
 - Examples (project specific information) – **all for the products, parts, markets of interest** : % of total products, % of total revenue, % of total customers (markets, % of total revenue of customers; number of transactions (number of applications, number of orders, number of dispatches, number of production instances, etc.)

Description of the system (continued)

- Beyond the web page
- Any relevant information that will support group's problem definition –
- Make sure that the group understands and summarizes:
 - **economic value,**
 - span of products,
 - span of customers,
 - **decision makers,**
 - **plans**
- All are related to the problem stated - YOU UNDERSTAND AS AN ENGINEER
- Will continue to be shaped until you start writing the progress report

Analysis of the Current System:

- ❑ Purpose: Analyze symptoms and complaints to refute current thinking
 - Narrative analysis + data analysis
 - Examples: Frequency of observing each symptom or each complaint, timing of each symptom or each complaint, etc. will likely become important information to set up your proposed system.
 - Examples: Cause and effect analysis with Fishbone diagram (SEARCH!!) ...
 - Measurement issues

Analysis of the Current System (continued):

- Purpose: Provide a detailed description of the current operations - your problem.
 - understand the decision instances,
 - information available at the time of the decision,
 - values of performance measures and how the performance is measured etc.

Reminder: This is what you are going to change (as a whole or partly) with your project, hence the group needs to make sure to learn what organization is currently doing in detail.

Analysis of the Current System (continued):

- Example analyses to understand current system:
 - Use of operations chart to show how production is conducted
 - Use of a flow chart to describe how a decision is made
 - Table that shows inputs for decision and specific decisions as output
 - Frequency of making decisions
 - Performance measures (count delayed orders, count the number of days an order is delayed, count the overtime hours, etc.) Make sure that you follow how (when, with which data) these measures are collected/computed.
 - Separate ABC analyses for suppliers, customers, products, causes of breakdown
 - ...

Analysis of the Current System (continued):

You may not want to limit yourself to analyze only the part of the system you are asked to be responsible as you may go beyond that to understand where your problem is in the big picture.

Use numerical information as much as possible, along with charts, figures, tables, etc., if needed to help yourself and the reader to appreciate the size and scope of the problem. We expect that each member of the group to appreciate these numbers so that the group can concentrate on those which are more important