Massachusetts Institute of Technology

Architecture & Systems Engineering

Week 5: System Architect

Project Portfolio

Name

Student

Massachusetts Institute of Technology

Week 5 Project

Overview

In the fifth and final project activity of this course, your team will step up and view the system from the role of the architect. The steps to the right will guide you through this process.

Note that some Scratch Pages are included at the end of this document for you to capture any ideas, sketches, etc. that you have as you work through the project. These will not be assessed and you are not required to submit them with your project (but you may do so if you think they offer any additional insight into your thinking process!).

REQUIRED STEPS:

Step 1: Develop the system architecture.

Step 2: Identify sources of ambiguity.

Step 3: Identify deliverables of the architect.

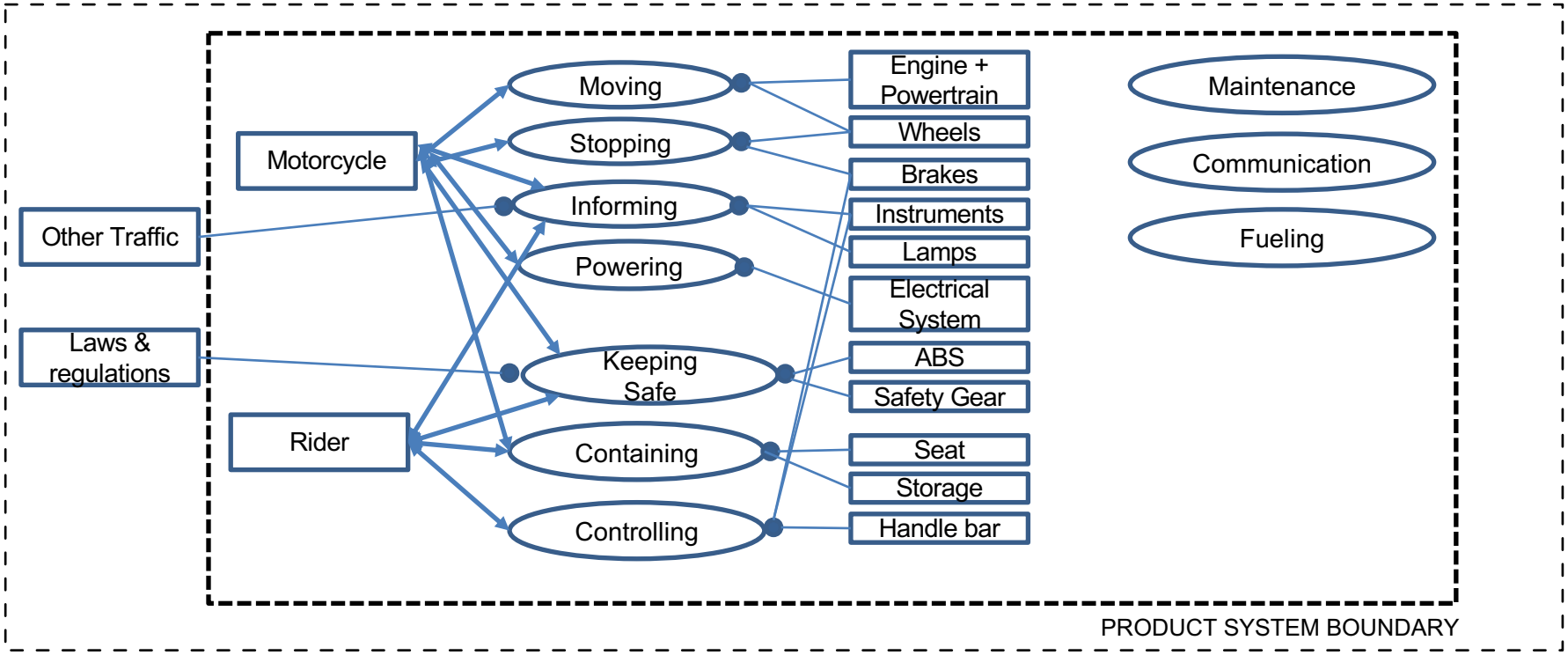
Step 4: Review and submit your project.

STEP 1: ARCHITECTURAL REPRESENTATION

For your chosen system, develop the system architecture diagram and insert the diagram below. Remember: System Architecture is the embodiment of a concept, the allocation of physical/informational function to the elements of form, and the definition of relationships among the elements and with the surrounding context. Be sure to include all information in a clean and understandable way.
Please remember the file size limit and resize or paste the image URL instead, as needed.

Name of System: Touring Motorcycle

System Diagram/Schematic



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STEP 2: SOURCES OF AMBIGUITY

One of the primary roles of the architect is to reduce ambiguity. Fill in the first column of the following table with at least five sources of ambiguity, and then note what data, analysis, or representations could be delivered by the architect to reduce ambiguity. Then, mark with an 'X' in the corresponding cell to indicate the type of ambiguity that particular data/analysis point is addressing.

		Types of Ambiguity (Select all that apply)				
Sources of Ambiguity and Open Questions	Data, Analysis, or Representation to Reduce Ambiguity	Fuzziness	Uncertainty	False Information	Unknown Information	Conflicting Information
What is the right styling for the motorcycle body?	Marketing study of customer preferences in target market, inputs from styling of current models	x				x
What should the ride 'feel' like?	Simulations based on previous models, and extensive testing of prototype over various conditions	x			x	
How much storage capacity should the bike have?	Marketing study of customer preferences based on usage and behavior patterns		x			
What is a good launch timeframe for competitive advantage?	Competitive intelligence gathering, and market forecasting studies.		x	x		
How much information should the rider be presented with via instrument cluster?	Customer preference study based on usage patterns of current or similar models	x				

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STEP 3: DELIVERABLES OF THE ARCHITECT

Over Weeks 3-5 of this course, you began to produce some of the deliverables of the architect. As a summary, the following table presents a complete list of an architect's deliverables. Mark the ones that have already been completed for your team's system throughout this course as well as the ones that you think haven't yet been produced. (Note: You are not responsible for completing the deliverables "Not Yet Produced.")

Are there any other additional deliverables you would add?

	Completed	Not Yet Produced
A clear, complete, consistent, and attainable set of goals		X
Description of the broader context in which the system will sit, and the whole product context.	X	
Concept of the system.	X	
Concept of operations for the system, including contingency and emergency operations.		X
Complete functional description of the system, with at least two layers of decomposition, including description of primary and secondary externally delivered function; process flow with internal operands and processes, including non-idealities, supporting processes, and interface processes with a process to ensure that the functional decomposition is followed.	X	
The decomposition of form to two levels of detail, the allocation of function to form, and the structure of form at this level.	X	
Details of all external interfaces and a process for interface control.		X
A notion of the developmental cost, schedule and risks, and the design and implementation plan.		X
Additional Deliverable of the Architect?		
Additional Deliverable of the Architect?		