

### Radical Transformation

From Manual & Mechanical to Autonomous & Electric

New and Complex Design Challenges

- Designs packed battery arrays
- Complex motor & control systems
- Powerful sensors & sensors
- Complex geometry

**POWERFUL SOLUTION** Digital Design Simulation

Early Frequent Pervasive Analyses



The story of two fictional suppliers designing an electric powertrain. How do they compare?

Mobility Corporation (Manufacturing Development) vs. Vehicle Dynamics (Detailed Development of electrically Driven 2.0L Systems and Vehicle Platform)

### #1 Concept Design & Architecture: Safety OBM's Objectives

54 OEM Requirements, 115 Sub-requirements & 67 Requirements

<b>1. OEM Requirements</b> Requirements were based on a reference vehicle, a 2014 Ford Focus.	<b>1.1 OEM Requirements</b> Requirements were based on a reference vehicle, a 2014 Ford Focus.
<b>2. Sub-Requirements</b> 54 sub-requirements are provided, added as requirements for the product.	<b>2. Sub-Requirements</b> 54 sub-requirements are provided, added as requirements for the product.
<b>3. Design &amp; Architecture</b> A target performance envelope is defined. The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>3. Design &amp; Architecture</b> A target performance envelope is defined. The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>4. Validation &amp; Approval</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>4. Validation &amp; Approval</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>5. Safety &amp; Compliance</b> Requirements are defined to ensure that the product is safe and compliant with the requirements of the public.	<b>5. Safety &amp; Compliance</b> Requirements are defined to ensure that the product is safe and compliant with the requirements of the public.

### 5 Key Challenges

- High cost of design & development
- Time to market
- Complexity
- Integration
- Validation

### 5 Key Advantages

- Reduced cost
- Improved performance
- Reduced risk
- Improved time to market
- Improved customer satisfaction

### #2 Detailed Design & Implementation: Before the requirements within the defined constraints developed in Phase #1.

<b>1. Safety &amp; Compliance</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>1. Safety &amp; Compliance</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>2. Safety</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>2. Safety</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>3. Concept &amp; Performance &amp; Approval</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>3. Concept &amp; Performance &amp; Approval</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>4. Integration</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>4. Integration</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.

### 7 Key Challenges

- Integration
- Validation
- Complexity
- Time to market
- Cost
- Customer satisfaction
- Performance
- Risk

### 3 Key Advantages

- Reduced cost
- Improved performance
- Reduced risk

### #3 Validation: Physical tests and simulations to ensure the stakeholder gets the product they want.

<b>1. Input and Output</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>1. Input and Output</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>2. Simulation</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>2. Simulation</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>3. Process</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>3. Process</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>4. Design Changes</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>4. Design Changes</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>5. Solution Control</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>5. Solution Control</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.
<b>6. Documentation</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.	<b>6. Documentation</b> The design team is given a target performance envelope and a target cost. The design team is given a target performance envelope and a target cost.

### 3 Key Challenges

- Integration
- Validation
- Complexity

### 6 Key Advantages

- Reduced cost
- Improved performance
- Reduced risk
- Improved time to market
- Improved customer satisfaction
- Improved product quality

### Digital Design Simulation will enable you to:

Give people what they expect.	Accelerate time to market.	Increase market share.
 People simulation against any car in the league helps you make a significant difference in creating customer designs.	 Extend lead productivity and only stress after a customer together approval!	 Use a holistic set of capabilities to cover innovation from end-to-end in the entire design cycle.
As with any Disruptive Products there are challenges to solve.	 Non-binding, non-persistent, & non-overshooting	 Self-back to equilibrium
	 Managing, engaging, and walking the wireframes	

To get more information please visit the website page or contact: [info@digitaldesignsimulation.com](#)

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