Building An Industrial Ecosystem: Crafting Optimal IIoT Interfaces For Automation
Industrial Internet of...
Industrial Internet of...

**Nouns:**
- people – customers/users
- places – facilities
- things – assets

**Verbs:**
- streamline process
- analyze information
- maximize efficiency
The hidden advantage of the IIoT... unforeseen relationships

1854 Cholera Outbreak
In Central London
by Dr. John Snow

One of the first pin/scatter plot diagrams.

Reference:
The Visual Display of Quantitative Information, Edward R. Tufte
What does GE do?
Our History

“I find out what the world needs, then I proceed to invent it.”

—Thomas Edison
We are a digital industrial company. We transform industry by connecting people, data, and machines.
Industrial Strength Challenges

Diverse User profiles
- Customers
- Integrators
- End Users

Conceptual Differences
- Late adopters - trailing edge
- Behavioral & process change across the board

Environmental Challenges
- Security
- Air gapped
- Sub-second data visualization

CX Footprint (Value Proposition)
FULLFILL CUSTOMER Promise
SEAMLESS - USER EXPERIENCE
ENGAGE OUR USERS

CX  UX  UI
Who are we designing for?

- Identify User Types
- Develop Personas
- Tell a story...

Customers are not necessarily users!
How to approach design?

The Design Thinking...

A formal approach that takes the essence of designers’ sensibility, process and methods to help solve problems in a practical, creative, outcome-focused way.
What Predix is creating
CX Concept – custom vs. modularity
CX Concept – modularity: takes advantage of the fluid nature of IIoT!
UX Personas and Requirements

**PRODUCT DEVELOPERS**
- ONE fully integrated development experience
- Robust pre-built components
- Seamless transition from requirements to model to code
- Simulation-based validation

**SYSTEM INTEGRATORS**
- Unified experience for system-wide integration
- Automation
- Configuration & troubleshooting toolkits
- Discovery and Provisioning

**OPERATORS**
- Ability to work outside the control room
- Shifting skillsets & roles
- Exception based
- Simplification & guidance in the face of growing complexity
- Operational analytics

**MAINTAINERS**
- Models, not schematics
- Intelligent diagnostics, prognostics, and analytics
- Knowledge management
- Mobility and hands-free interaction

**SYSTEM ADMINISTRATORS**
- Unified installation, administration, and update
- Streamlined, intuitive processes
- Tools & partnership to optimize system operation
- Ability to adapt quickly to changing business needs

**ANALYSTS**
- Access to unprecedented quantities of data
- Tools and services to find actionable insights in the data
- Advanced information visualization
- The means to communicate and collaborate insights with others

**MANAGERS**
- Transparency
- Integrated decision support & planning tools
- Enterprise integration
- Collaborative intelligence
- Fleet/enterprise analytics

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An Industrial Ecosystem

...allows the composition of IIoT data into unforeseen visualizations
Wrap-Up

- The Importance of user profiles
- It’s about the journey…tell a story
  - All about process change
  - Manufacturing/industrial space is trailing edge
  - It’s not about an app changing a single behavior. It about revolutionizing the entire work stream
- The purist form of B2B
  - End-users are not point of purchase
- Challenging Environment(s)
  - Security
  - Air gapped
  - Sub-second data visualization
  - Boundless workspace

“If I had asked people what they wanted, they would have said faster horses.”
– Henry Ford
Imagination at work