

DESIGN CASE STUDY

Introduction

SOTI Inc. is a proven innovator and industry leader for mobility and IoT management. Valued at \$1bn with 6 global offices and 700 employees in more than 22 countries, the company provides advanced mobility solutions and services to 17,000 enterprise customers around the world.^[1] The flagship product, **MobiControl**, is a mobile device management application, used to manage a company's IT assets, such as computers, mobile phones, and industrial handheld devices.

In recent years, SOTI launched **SOTI ONE Platform** that provides an extensive software suite that expanding the company's reach into entirely new areas of business mobility and the IoT.

“ Design Team Mission ”

Together, we design and we build useful software solutions with human-centered experience to solve world-class enterprise problems.

Since	Enterprise Customers	Sales Revenue	Global Employees
1995	17,000	100M	700



[1] <http://www.bbc.com/news/business-40504764>

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Key Objectives

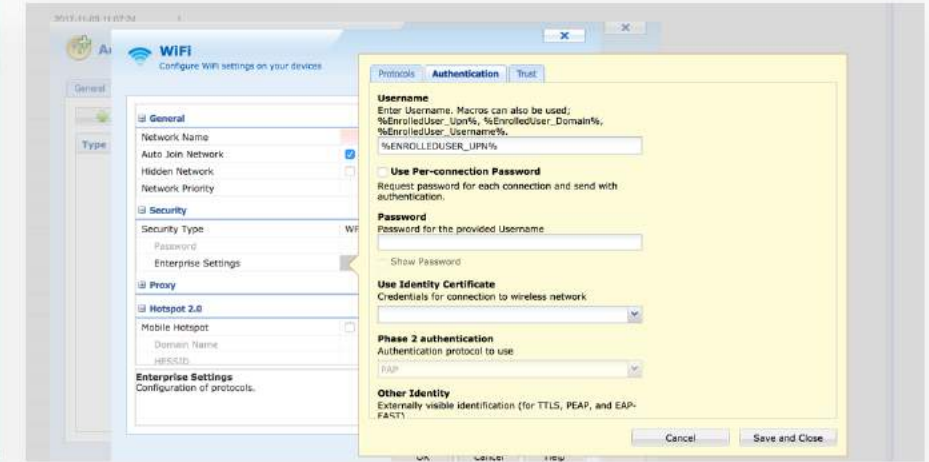
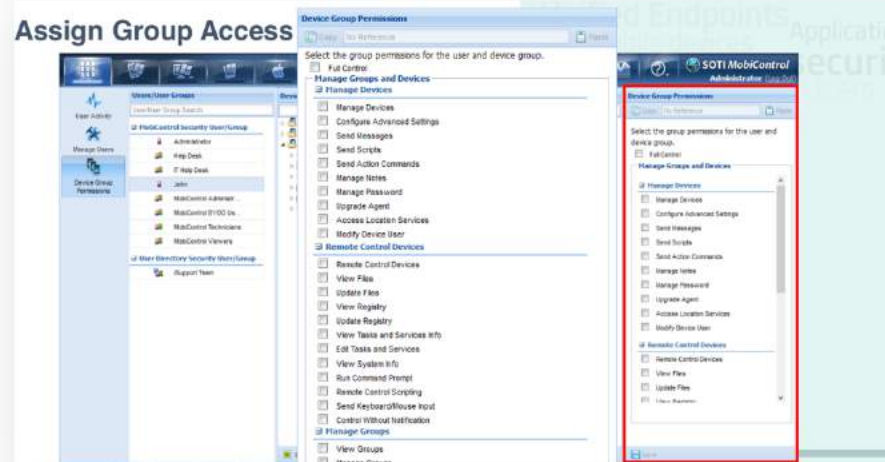
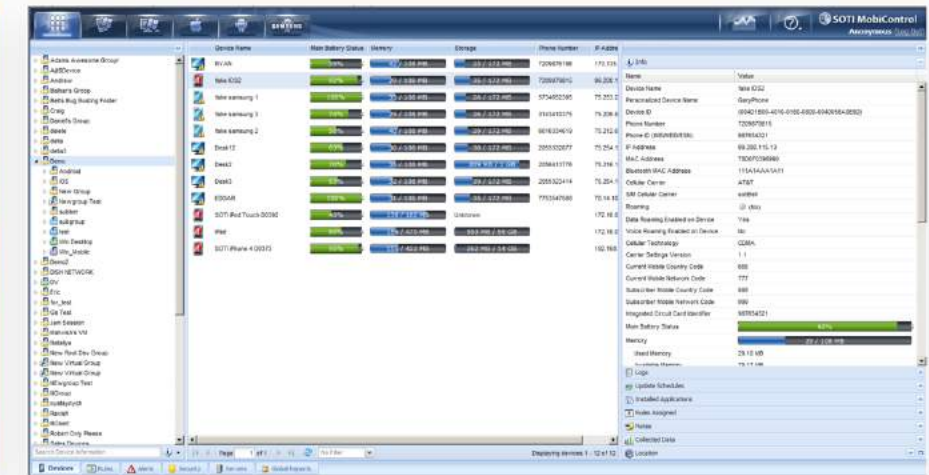
Deliver a new user-centered, scenario/use case driven, simple, yet familiar, MobiControl User Interface that adopts consumer product design standards and provides a seamless transition from the legacy console.

The Design Process breaks down into 5 key phases.

- 1 Discover
- 2 Define
- 3 Ideation and Proof of Concept
- 4 Build, Test, Iterate
- 5 Deliver

Build a foundation that synthesizes the knowledge, process, best practices and design assets that can grow and contribute to building SOTI One Platform software suite.

- 6 Design System
- 7 Scale Examples



SOTI MobiControl 'Legacy' console and SOTI ONE product family overview.

Discover

Users of the enterprise product, like MobiControl, are unique and with high domain expertise and specific knowledge to interpret what they see in the system.

Tasks are often governed by specific use cases with start and end goal, yet the path is exploratory. Users rely on existing behaviors, or 'instincts', that they have developed from heavy daily usage of the system to achieve the goals.

Though with increasingly higher expectations about user experiences, identifying patterns of use that users are already familiar with to provide design solutions that focus on usefulness and provide enhancements to productivity are the keys to success.

1.1 User Personas

Customers who adopt MobiControl are from industries that are often different in nature. Same with the users. Though various types of personas were developed early based on value prop, they are not necessarily using the system for daily works.

The Primary Persona is the type of user that spends most of the time working and rely heavily on the functions and usability of the system to achieve work goals. The redesign of the system should first be focused on the scenarios and use cases surround this persona.

PERSONAS

- COMPLIANCE OFFICER
- NETWORK ADMIN
- CEO, COO, CONTROLLER, W FINANCE, DIR. OF FINANCE
- DIR. OF IT
- INFOSOC ENGINEER
- PROJECT MANAGER
- TELECOM MANAGER
- DIR. OF OPERATIONS

Compliance Officer							
Network Administrator							
*C-Suite (Business)							
DIR. ESO							
Director of IT							
Infosec Engineer							
Project Manager							
Director of Operation							
IT Manager							
Mobility Team Leader/Manager							

PRIMARY PERSONA

Yasser Kenneth , IT Technician
 Male, 25 yrs old, Single, College Certificate, Problem solver
 Yasser says he's really a people person, although he spends most of his time working with computers. Since graduating from the state college's technician certificate program 3 years ago, he has been working at ABF National, a shipping company in Little Rock, Arkansas.

Work Scenario
 His job is to make sure all of the company's electronics equipment are up and running all the time. They provide support for almost 2000 electronic devices, 700 track computers, 1000 mobile phones, 200 computers, and 150 printers, photocopiers, and other peripherals.

Goals
 To fix the problem as quick as possible.
 1. The ability to quickly find the problem device(s), while he has the anxious customer on the line.
 2. Identify what's wrong with the device(s), and show him the path to a solution.
 3. Confidence that the solution worked as expected.
 "I wish I could investigate the problems, but I don't have time. I just need it fixed." - Yasser

Snapshot of the Primary Persona.

1.2 Expert Interviews

In order to understand not just the current product functions and services, but the broader sense of insights to drive design innovations, we arranged phone interviews with IT administrators and technicians from many of the largest clients to discuss the topics about their uses cases, needs, pains and best practices using MobiControl.



1:04:02

Nestle



52:13

Frontline



1:09:35

Stratix

Audio recording sample cannot be provided.

Interview Recordings and Notes are organized detailing findings and insights from each participant including key quotes and important take aways.

"I spend a lot of time (to) figure out if I've done something right or wrong (in the console). (And) If I'm looking to find some specific data, it really took me a while to find it"

Quote from one IT admin from a major client.

Define

After the initial discovery phase, the goal is to define the problem areas and discover design opportunities.

For complex system redesign, Task Analysis and Mental Model are among the most effective methodologies that can be used to map the information collected from the user interviews, and to understand new scenarios, use cases, patterns of use and identify problem areas from user’s perspective.

In the end, the design opportunities that are discovered and defined should be aligned with users’ perceptions and expectations of the system to perform tasks and activities and add value to their daily productivity.

2.1 Design Methodologies



Task Analysis Grid is used at first to collect existing functionalities from the system based on known scenarios, use cases, and task journeys. This is served as the base framework for further analysis.



The Mental Model developed here is based on task analysis grid to represent ‘System Space’ in order to limit the scope of the redesign. Mapping of the new scenarios, use cases, pain points from user’s perspective to identify major problem areas in the system.

Sample analytical models and process.



Brainstorming Sessions are hosted by designers, major POs and PMs are invited, together to generate possible considerations that could be transformed into impactful, and feasible design opportunities.

2.2 Problems to Design Opportunities

The ideas and considerations produced from the brainstorming sessions are synthesized into a couple of areas of design opportunities. **How Might We (HMW)** questions are used to communicate these opportunities, examples follow:



HMW provide the search experience for complex filtering capability, yet so simple to use?



HMW visualize data based on properties to allow users to drill down into the devices or send as reports?



HMW simplify the configuration experience to make it less confusing and more accurate?

Ideation & Proof of Concept

Drawing on the user insights from the discovery phase, understandings developed through extensive task and mental model analysis and design opportunities definitions, the team can now synthesize and transform all of the raw ideas into potential design concepts.

The critical exercise seeks to balance divergent exploration and convergent analysis, develop a holistic awareness of emerging engineering constraints and complexities to make sense of the design solutions that will help shape the new MobiControl user experience.

During this period, the team of designers, PMs, and key developers work together in a series of workshops to ideate on high-level UI mocks that are able to articulate and align with the product vision.

With the initial ideas in place, the UX design team can assess, synthesize and detail the concept into mid-fidelity wireframes for a Proof of Concept with executives and stakeholders in the company.

3.2 Co-creation Workshops

Workshops are conducted by designers, each teamed with a group of PMs to produce low-fi UI wireframes. Ideas are then evaluated and synthesized into a few promising directions of where the design could be moving towards.

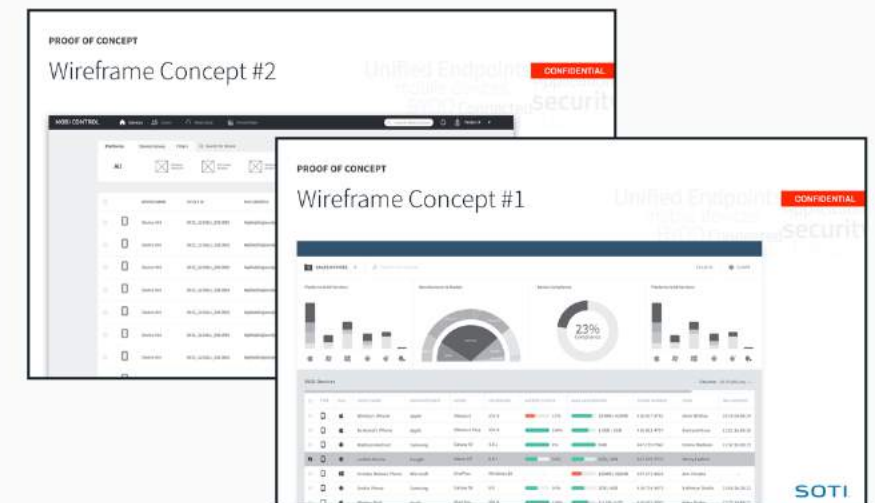
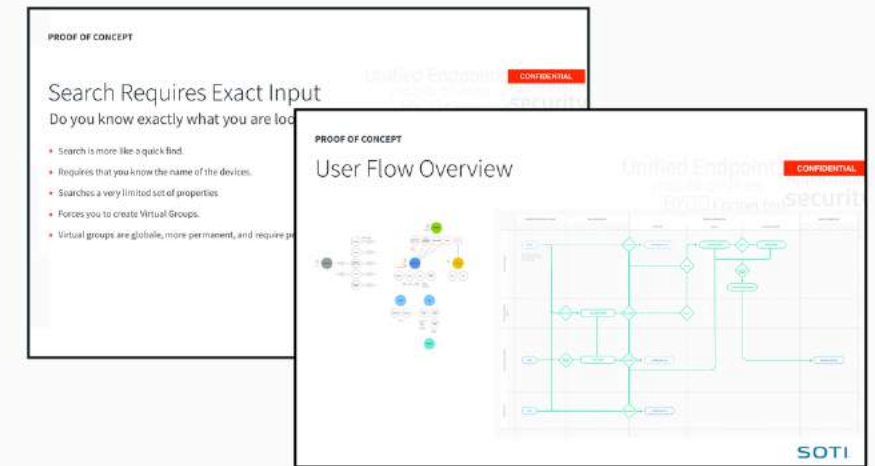
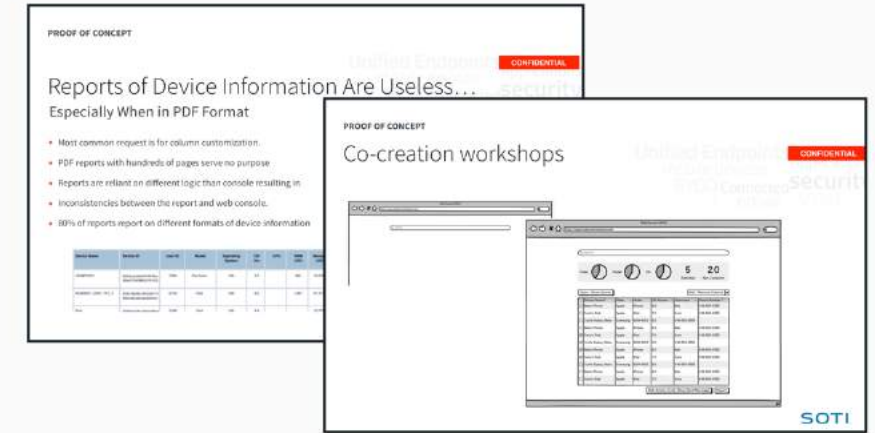
3.1 IA & User Flow

Though changing the existing information architecture is not prioritized into the scope of the project, a quick overview of the user flow based on the proposed redesign of the system is developed in order to visually communicate the benefits. This practice also helps PMs and key development managers to assess the complexity to make necessary improvements to the backend.

3.3 Proof of Concept Presentation

A Proof of Concept presentation is compiled by the design and PM team to share and discuss highlights from the project to date including research, insights, architecture complexities and mid-fidelity wireframes. The presentation also demonstrates a complete walkthrough of the methodologies and results from each phase to ensure the key stakeholders and executives are up to date on the project's progress.

Sample pages from the Proof of Concept presentation.



Build, Test, Iterate

At this point, the team has already received high praise and approval from the Proof of Concept. However, the product is far from refined and ready for General Availability (GA). It is critical that the team takes an agile approach to build a Minimal Viable Product (MVP) for testings and iterations.

Since the major PMs and key developers are directly involved in the design process, which made the process of building the MVP a rather smooth practice. Frontend design and backend technologies are prioritized and translated into Epics and User Stories for development sprints.

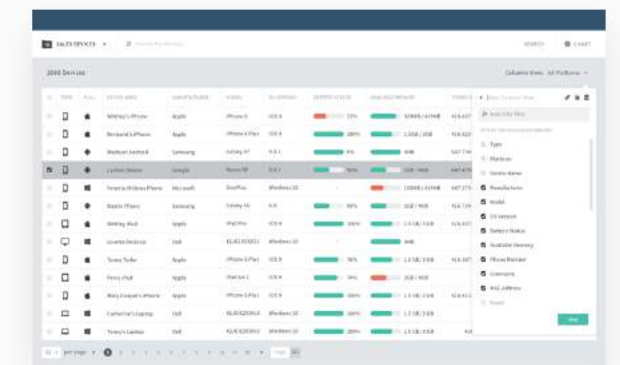
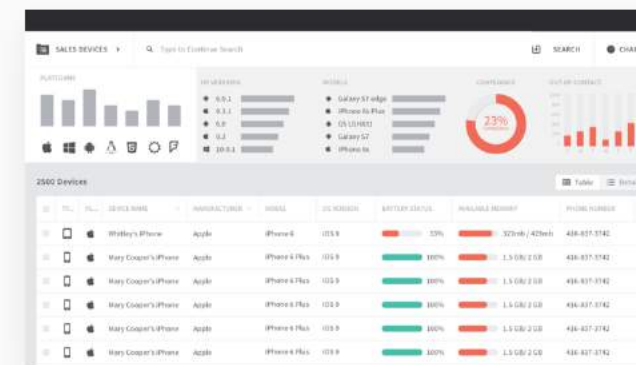
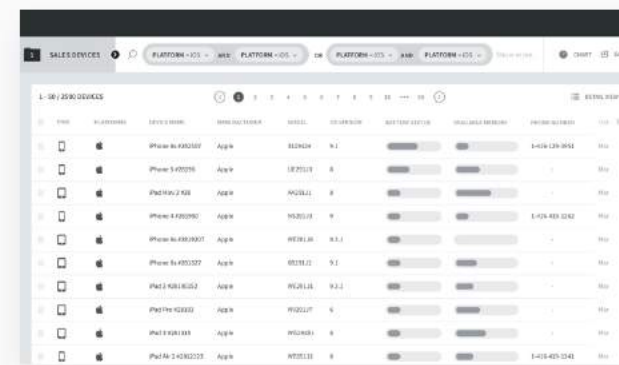
Design tasks are split among UX designers to execute interaction details, reviewed and tested early using interactive prototypes (limited). Refined ideas are built and produced a complete end to end flow for further testings in the MVP console environment.

4.1 Prioritization, Epics and User Stories to MVP

Frontend design Epics and Stories are created while the backend team works on building the APIs to allow syntax search, data visualization possible.

4.2 Rapid Prototyping and Concept Refinement

Areas of the product redesign were divided and assigned to different UX designers to develop interaction details. All design works are placed in Invision for review during weekly design sync up meetings to synthesize ideas into building an MVP console environment (NGUI) for testings and refinement.



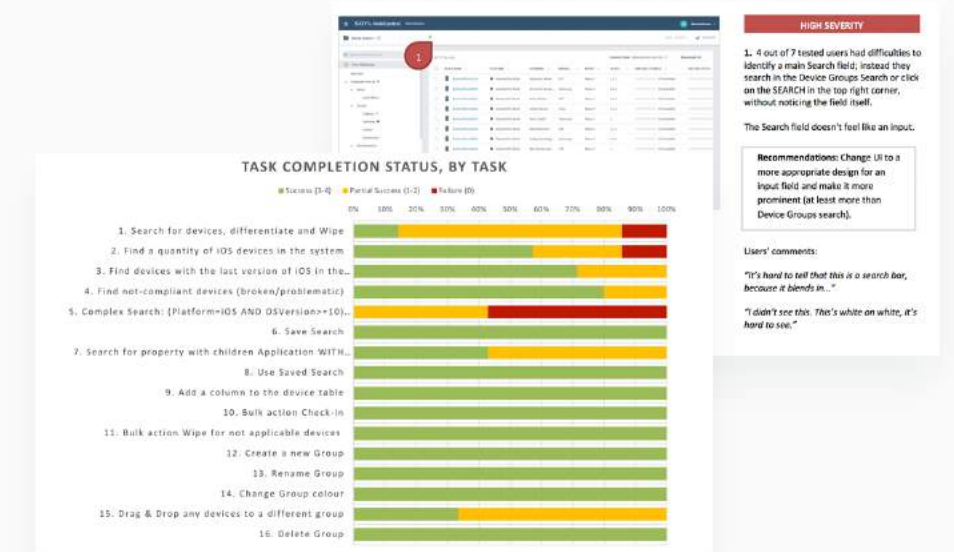
e.g Search and Charts are each taken by a UX designer to complete details.

MVP console are developed based on synthesized ideas.

4.3 Usability Testing and Iteration

Testings were performed on the MVP console environment which demonstrated an end to end flow of the major redesign solutions, aiming to identify the UX problems and areas of improvements.

Test Results are recorded and compiled by the success rate among participants, and the problems were prioritized by severity. The majority of tasks show high-performance rate, but some critical issues were found on a few tasks that need improvements.



Sample usability testing results.

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Deliver

Elastic Search and Bulk Action make complex syntax search easy for a user to find any set of devices from the system to perform device actions altogether or save search results for future use such as reporting.

OR | platform value1, value2,

EXTENDED PROPERTIES

- Apps
- Profiles
- User Groups

OS VER

4.1.2	100%	100%
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DEVICES PROPERTIES

4.1.2	100%	100%
4.1.2	80%	80%
4.1.2	76%	76%

OS Versions

ment Date

AVAIL

Sample redesigned console with Elastic Search and Bulk Action.

SOTI. MobiControl | Devices

Executive Devices | Device Family = Android Plus OR Device Family = Zebra + Add a filter

DEVICES 1-50 of 313 50 Per page 1 of 6

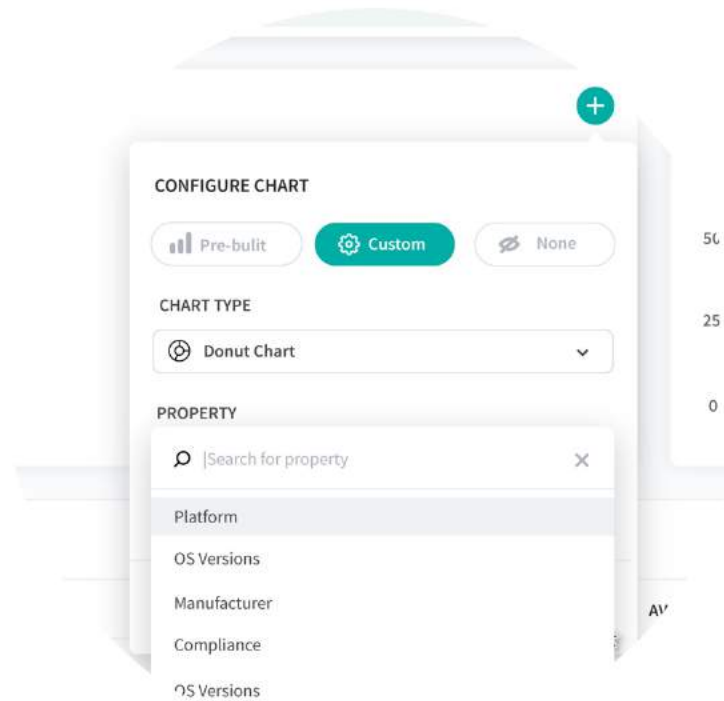
DEVICE NAME	DEVICE FAMILY	MANUFACTURER	MODEL	OS VERSION	BATTERY STATUS	AVAILABLE MEMORY	PHONE NUMBER	USER NAME	MAC ADDRESS
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	100%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	100%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	80%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
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Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	75%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	74%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	74%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	64%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	76%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	75%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
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Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	64%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15
Android_Sim1_4582	Android Plus	LG	GT-N7105	4.1.2	76%	165MB / 233MB	16828025033	Unknown	4083DE3F6E15

3 Devices Selected

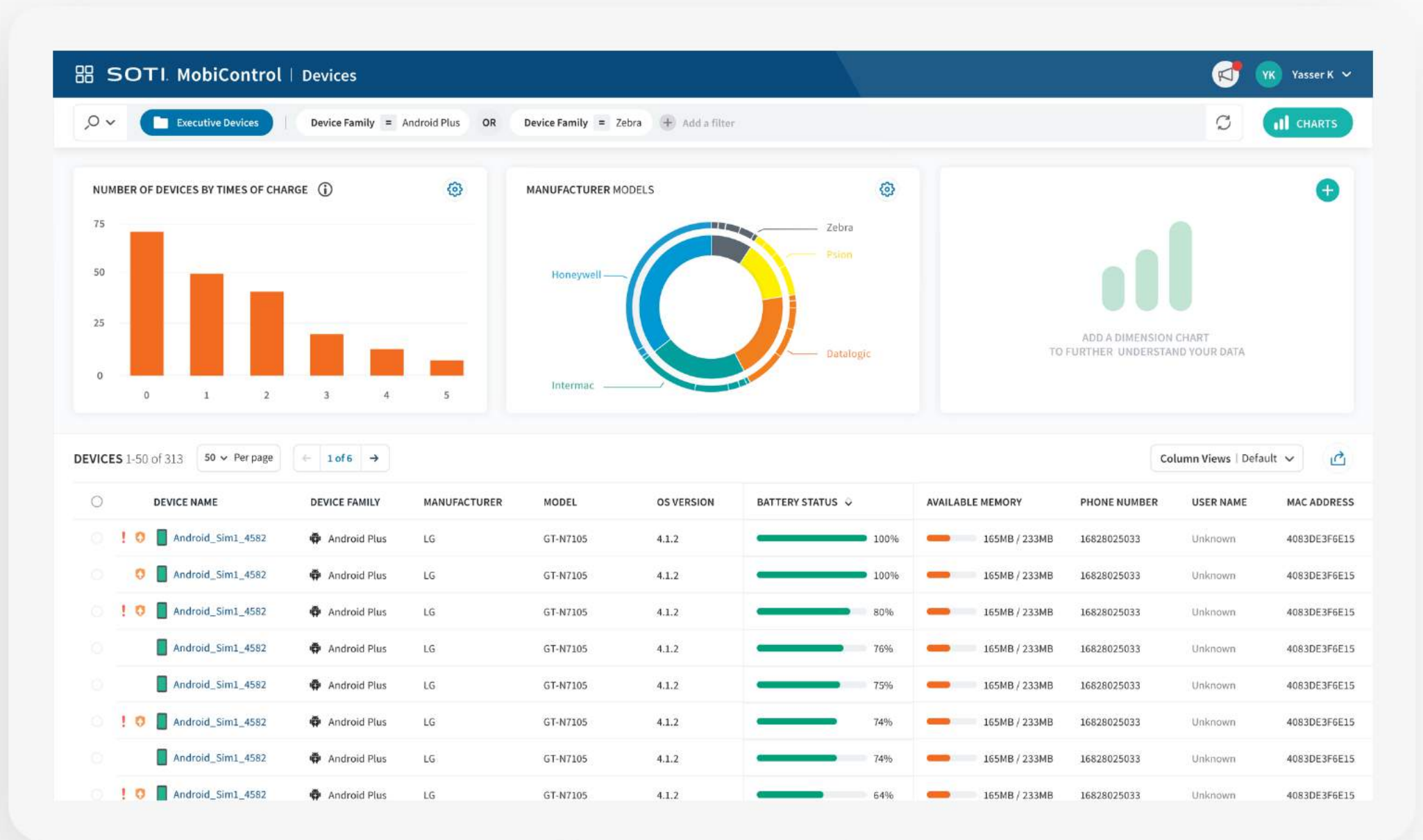
0.1. 2. 3. 4. **5.** 6. 7.

Deliver

Data Visualization and Reporting allow for easy creation of charts based on one or two device properties. A user can either use the chart to drill down into the devices or send them as reports.



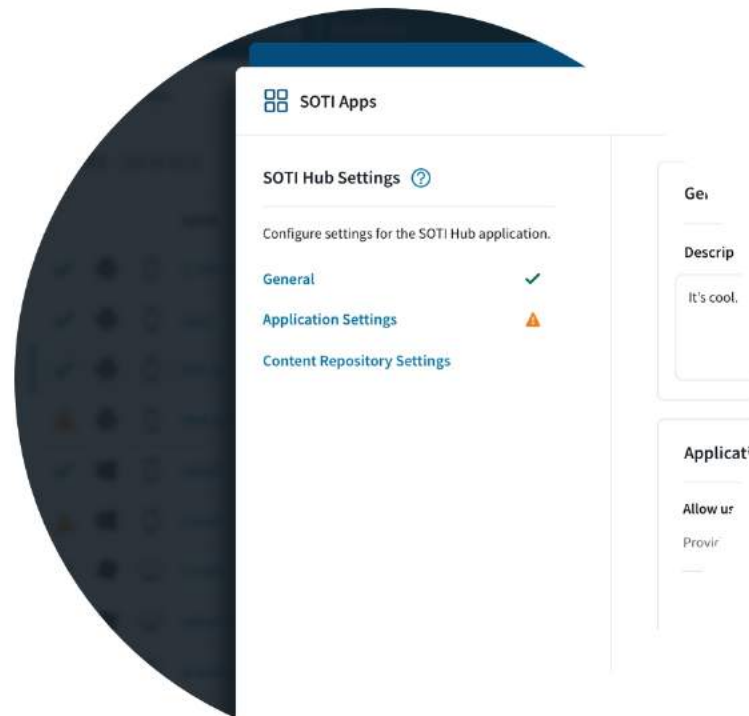
Sample redesigned console with Data Visualization.



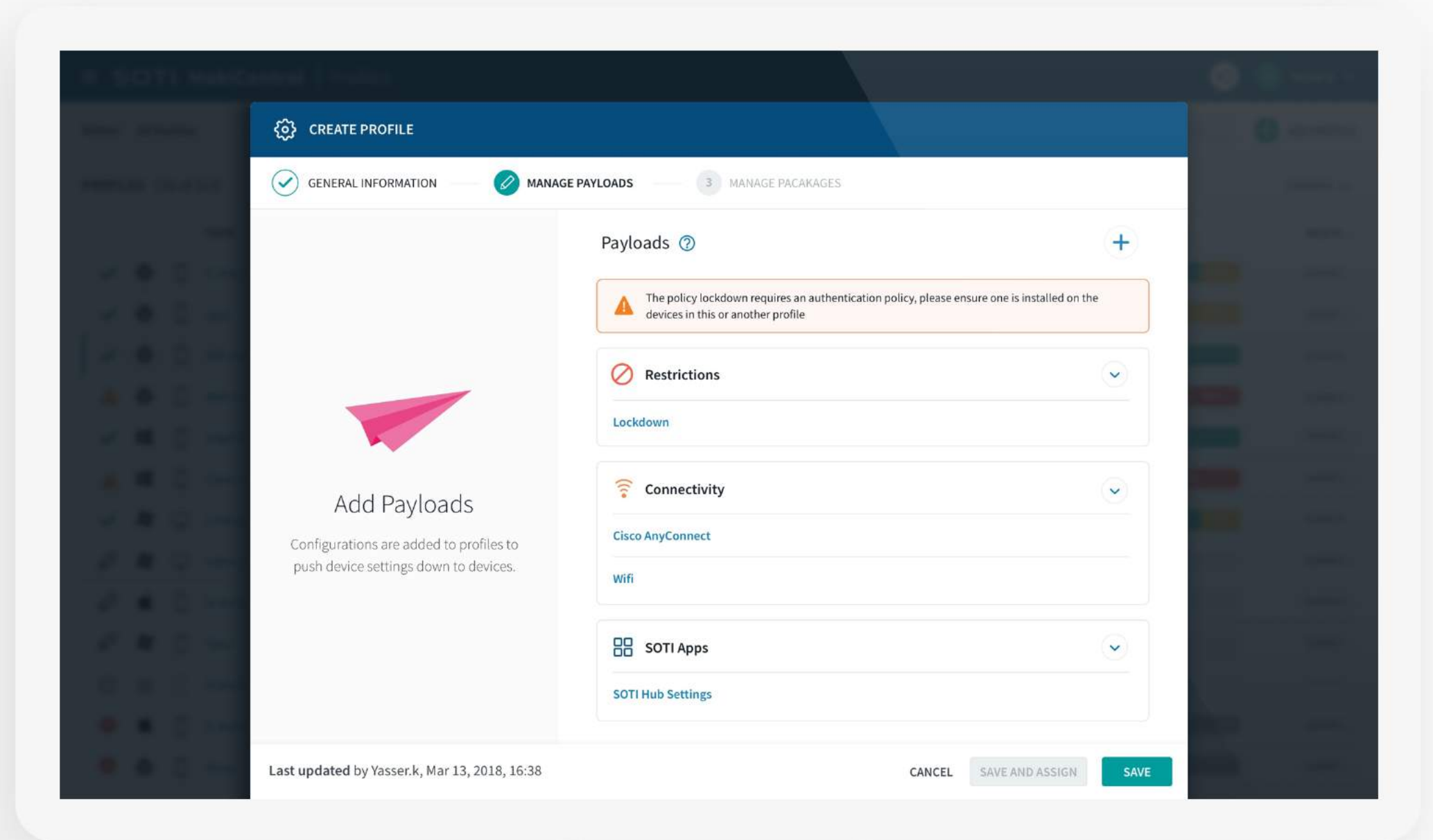
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Deliver

Redesigned Dialog Module take in patterns seen in mobile interaction - a deeper dialog slides up and pushes the last one to the back - to signify clear relation and path. Data-driven forms and steppers are also introduced to complex configurations, as well as instant feedbacks for success, warning, or failure.



Sample redesigned console with Configuration Module.



Design System

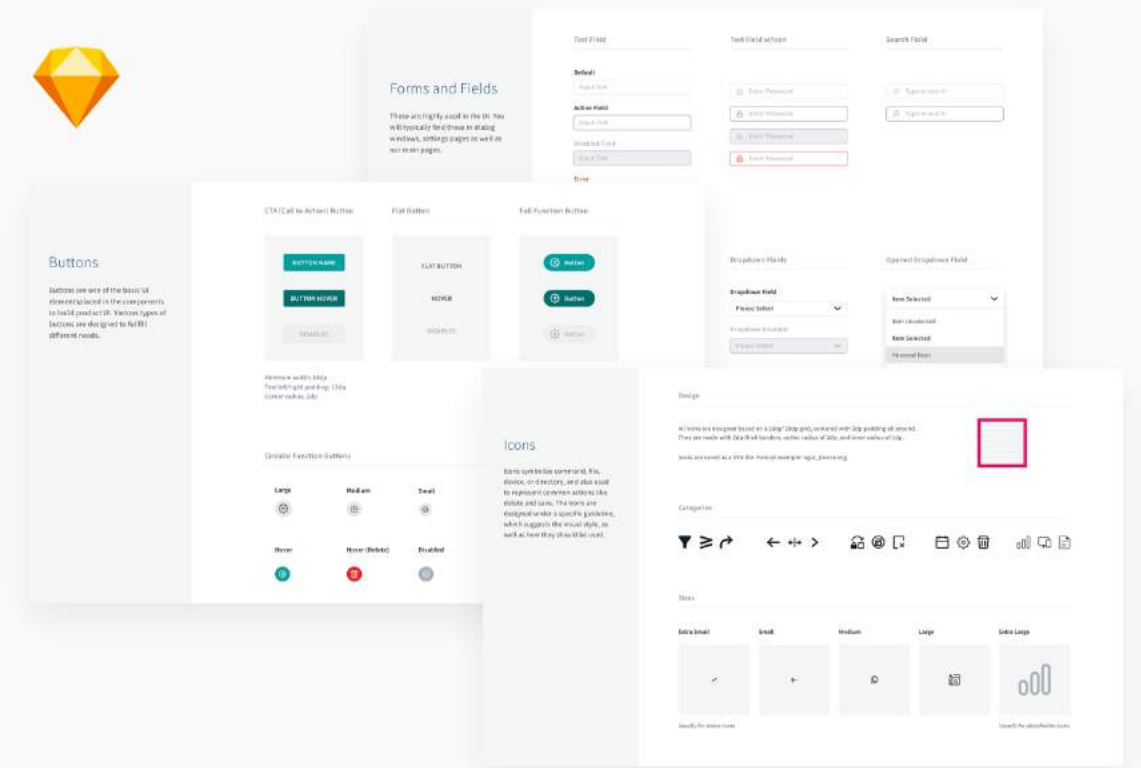
The Design System is initiated and developed during the process of designing the product.

The goal is to document the process, ideas and offering Design Tool Kit to all existing and future designers on the team. This is an ever growing effort to build a solid foundation to scale best practices and ensure consistency to the entire company for upcoming new design projects.

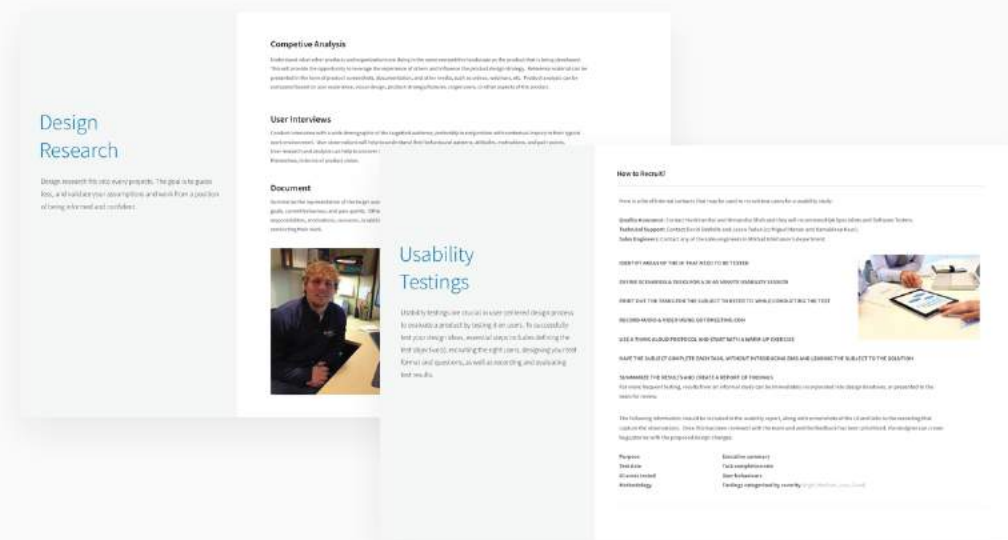
6.1 User Interface Guideline

The latest version of the User Interface Guideline covers the basics including product visual language, color palettes, typography, iconography, data visualization, as well as component library and common pattern definitions. As new products/features are being designed, new use cases and patterns are collected and contributed back to the guideline to either add a new or improve the existing content.

Design Tool Kit is also available using Sketch software which contains page templates and symbols that can be directly used by designers to produce pixel-perfect mockups efficiently.



Sample pages from UI Guideline.



Sample pages from Design Process Guideline.

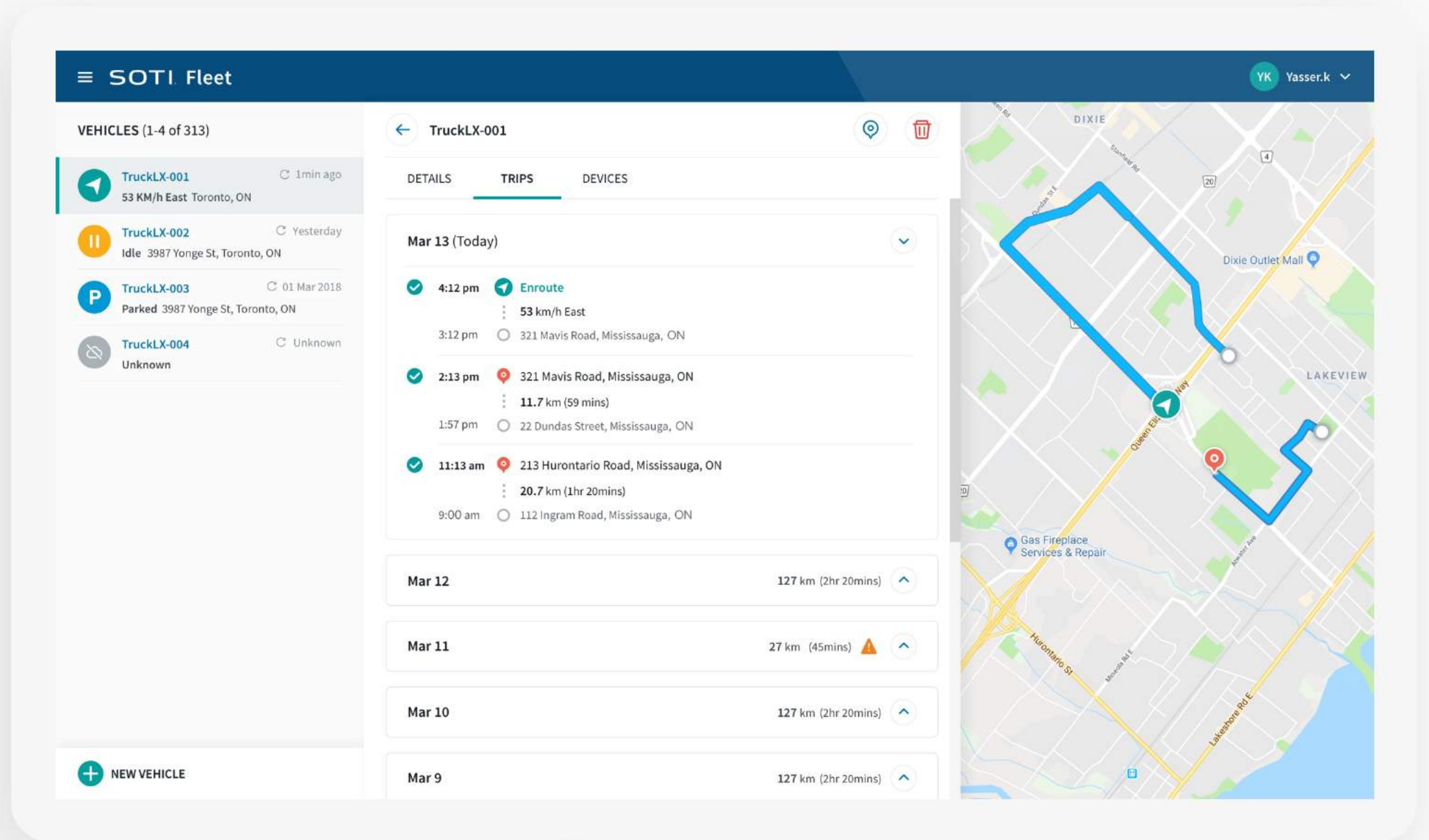
6.2 Design Process Guideline

This guideline synthesizes and documents design process including design principles, methodologies and communication templates to be reused for other product design projects. The team always keep a look out for industry best practices to continuously improve the design practice and effort in the company.

Scale Example

SOTI Fleet. is a product that manages and monitors freight assets, vehicles, tracking devices, as well as to provide a better location-based solution to mobile devices.

The three panels view used in this product provide a new page layout that some of the other products can benefit from, and patterns such as Side Info Panel and Data List are defined and contribute back into the User Interface Guideline.



0.1. 2. 3. 4. 5. 6. 7.

Scale Example

SOTI Insight is business intelligence solution that integrates with SOTI ONE platform to make it easy for enterprises to collect, aggregate and analyze data from mobile apps, mobile devices, IoT devices, as well as from enterprise applications.

The main interaction patterns used to design the product is based on the Data Visualization from MobiControl to provide users with consistent expectation on how the system works. Use cases such as chart resizing and deep customization are defined as new patterns and contributed back to the UI Guideline for future use.

Sample product design mockup.

