



California Department of Technology

Tech Shop Prototype

RFI Design Process Documentation

March 03, 2017

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Project Brief

Build a functional working prototype application enabling The CA Department of Technology to serve all CA state agencies by providing a single source of the best options and prices for technology hardware, software, and services.

Step 1: Clarify the Why

Understand real needs and goals from people in the business and their customers.

Project Background

Current Situation

Today, each [California state agency](#) manages their own acquisition of technology and relationship with vendors. Since these efforts are independently repeated at each agency, this produces inefficiencies in time, costs, and effort.

Project Goals

The CA Department of Technology would like to serve CA state agencies by providing a single source of the best options and prices for technology hardware, software and services.

This would allow a representative from a state agency to log in and quickly find the technology they need at a pre-negotiated cost, removing a number of steps from each agency's current technology acquisition process.

Outcomes

By centralizing the negotiation and acquisition of technology for state agencies, CDT will be able to improve the efficiency of the State's acquisition processes by lowering state agency costs and risk (see [CDT 2016 Strategic Plan, page 5](#)) through streamlining processes and standardizing hardware/software offerings.

Additionally, it affords an opportunity for CDT to help state agencies find the right goods for their needs based on CDT's subject matter expertise.

Goals

Ease of Use

- Requester can quickly find and request hardware, software and services which match their needs
- Administration finds it easy to create and edit options in catalog
- Experience is usable on web, tablet, and mobile

End-to-End Support

- Requester can feel supported by experts
- Requester can manage their request

Reporting

- CDT Administration can gain insight into State Agency trends
- State Agency Requester can analyze their orders

Efficiency

- Drive down costs to acquire technology in California state agencies
- Streamline contract negotiations with vendors

Persona Constellation

STATE AGENCY

1. [Requester](#)
2. Employees

LEAD PURCHASING ORGANIZATION

([DGS](#) + [CDT](#))

1. [Data Administrator](#)
2. Vendor relations
3. Management
4. Finance

VENDOR

1. Enterprise Sales Rep
(Point of Contact)

In-scope for MVP

Out-of-scope for MVP

State Agency Requester Persona

The State Agency Requester is an individual responsible for ordering the IT hardware, software, and services that a State Agency's employees will use to perform their job.

Our research showed little difference between the core concerns and needs between individuals who had little understanding of computer hardware and those we would consider proficient.



“The biggest pain was having to do research into something I knew nothing about.” – Dennis

“Now, Apple has simplified so much it’s so helpful, you don’t have to change much, you don’t need a lot of options. The basic offerings are good enough” – Robert

“You’re using public money. A big factor is cost based on value not just initial cost. The government gets in trouble for paying too much. But the quality is an issue.” – Dennis

State Agency Requester Persona

Jobs

1. Provide hardware and software for an Employee to do his/her job
2. Understand employee need
3. Meet government standards and protocol
4. Find appropriate vendor
5. Justify costs
6. Look good with colleagues
7. Work in an effective environment

Pains

1. Lack of the sufficient knowledge
2. Lack of time
3. Lack of clear request from employee or business
4. Too many options
5. Delivery times
6. Vendor's goals may not be aligned with the Agency's
7. Keeping track of equipment & order history
8. Responsibility for ultimate cost of goods

Gains

1. Focus on primary activities of one's job
2. Can submit IT hardware/software/service requests with confidence
3. Help when stuck
4. Leads to happier colleagues
5. Feel supported by a community who has similar needs and challenges

Data Administrator Persona

The Data Admin is an individual who works at the California Department of Technology and is responsible for publishing IT product and service information.

For the purpose of our prototype we have also associated the activities of tracking, analyzing and visualizing order data with this user.



It's a challenge to gather
informative reports.

Takes too long to make updates in the system.

Billing requires manual work.

Data Administrator Persona

Jobs

1. Support State Agency Requesters in their hardware/software/service acquisition
2. Describe purchasing trends
3. Improve web experience

Pains

1. Takes too long to make updates in system
2. Available styling options don't meet what they may have in mind (or what their customer desires)
3. Vendor information doesn't align with CMS fields
4. Billing requires manual work
5. Challenging to gather informative reports
6. Many customers, no customer service/support staff

Gains

1. Changes need to meet my local approval protocol
2. Let me publish changes as quickly as possible
3. Billing and reporting are push-button
4. The insights I share are valuable
5. Customer think the content is appealing
6. Reports should look visually appealing

Design Principles

Efficient

Optimizes for and streamlines tasks, reducing variables. Shows empathy for user's desire to use public money efficiently when researching and making purchases.

Knowledgeable

Facilitates decision-making by anticipating what users need. Communicates with confidence and understanding of how government agencies use hardware, software and services.

Approachable

Feels uncomplicated. Meets higher standards of convenience users expect from ecommerce experiences in their personal life.

High-level Technical Assessment & Approach

Project Goals

- Demonstrate development capabilities to CDT
- Demonstrate development discernment in considering valid options

Solution Explorations

- Consider build vs buy (Shopify or hosted Magento)
- We chose to build it custom
- API tier needs to be *fast*, modern and elegant (Rails vs Phoenix vs Node)
- Front-end needs to be responsive, fast and modern (React vs Ember)

Feasibility Considerations

- Utilize ChartJS to meet visualization needs quickly
- Catalog size
- Workflow for this checkout experience differs from traditional payment flows

Service Map

Out of scope

In-scope for Phase I: MVP Prototype

Out of scope

Out of scope

Personas

 **State Agency Employee**
SECONDARY PERSONA

Employee Request for new equipment
User has a hardware, software, or services request.

"I need a new computer with these specific specs, required by my job."

 **Requester**
PRIMARY PERSONA

Authorized user receives employee request and buys hardware, software, or services for state agency employee.

 **Administrator**
SECONDARY PERSONA

Authorized user can create new items, edit existing items, and delete items from the catalog.

 **Budget Approver**
SECONDARY PERSONA

User sets budget targets and reviews and approves spending done by the requester.

 **Vendor**
SECONDARY PERSONA

Enterprise sales representative, primary point of contact

Request Phase

Employee Request for new equipment
User has a hardware, software, or services request.

"I need a new computer with these specific specs, required by my job."

Authorized user receives employee request and buys hardware, software, or services for state agency employee.

Research Phase

 **Specific item requested?**

YES
NO

 **Find specific item(s)**

Research
Search, filter, or sort items in catalog to find item(s).



USER CENTRIC DESIGN: How might we optimize a contextual search experience for the requester from various state agencies?

How might we balance:
1) a general "catch-all" search functionality,
2) "searching for a specific person's needs," and
3) "searching by hardware, software, or services"?

EASE OF USE: How might we help the requester quickly search for the item they need to purchase?



Pain point: Requesters currently do not have an effective way to research goods and services to be acquired from all vendors.

 **Compare vendor options**



USER CENTRIC DESIGN: How might we optimize the search feature for research and decision making for the requester?

How might we help the requester compare vendor options side-by-side?
How might we optimize the detail view for each item?

EASE OF USE: How might we optimize for responsive design?

EFFICIENCY: How might we drive down costs to acquire technology in California state agencies?



Pain point: Requesters currently do not have an effective way to compare prices from all vendors.

Order Phase

 **Add items to cart**

See item detail, select quantity, and add to cart.



USER CENTRIC DESIGN: How might we optimize the detail view for items?
How might we optimize scanning related items?

How might we feature well-reviewed items and services that have met or exceeded expectations from other state agencies?

 **Review cart**

See what is in cart and make any edits.



END TO END SUPPORT: How might we enable the requester to better manage an order's status? (edit or update, etc.)

How might we make the order review easier to understand?

 **Submit order for approval**

Confirm item/cost/budget reviewer to approve.



END TO END SUPPORT: How might we enable the requester to better manage an order's status? (edit or update, etc.)

How might we make the order review easier to understand?

Track Phase

 **Track Current Orders**

Analysis Phase

 **Analyze past orders**



What does a Requester need to analyze orders, costs, and value? What can we do to help enhance this experience?

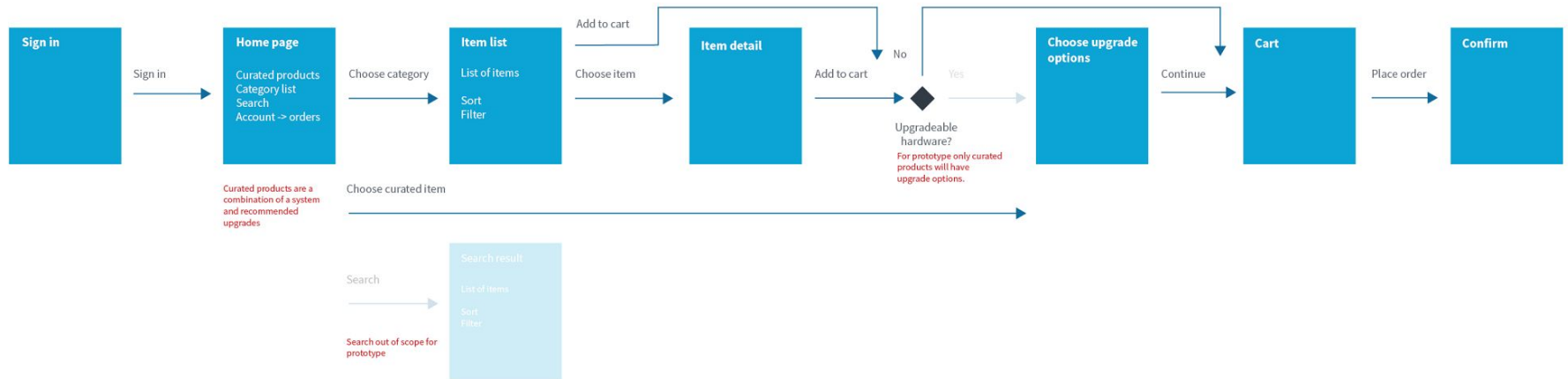


Pain point: Requester and budget approved need effective reporting tools for analysis.

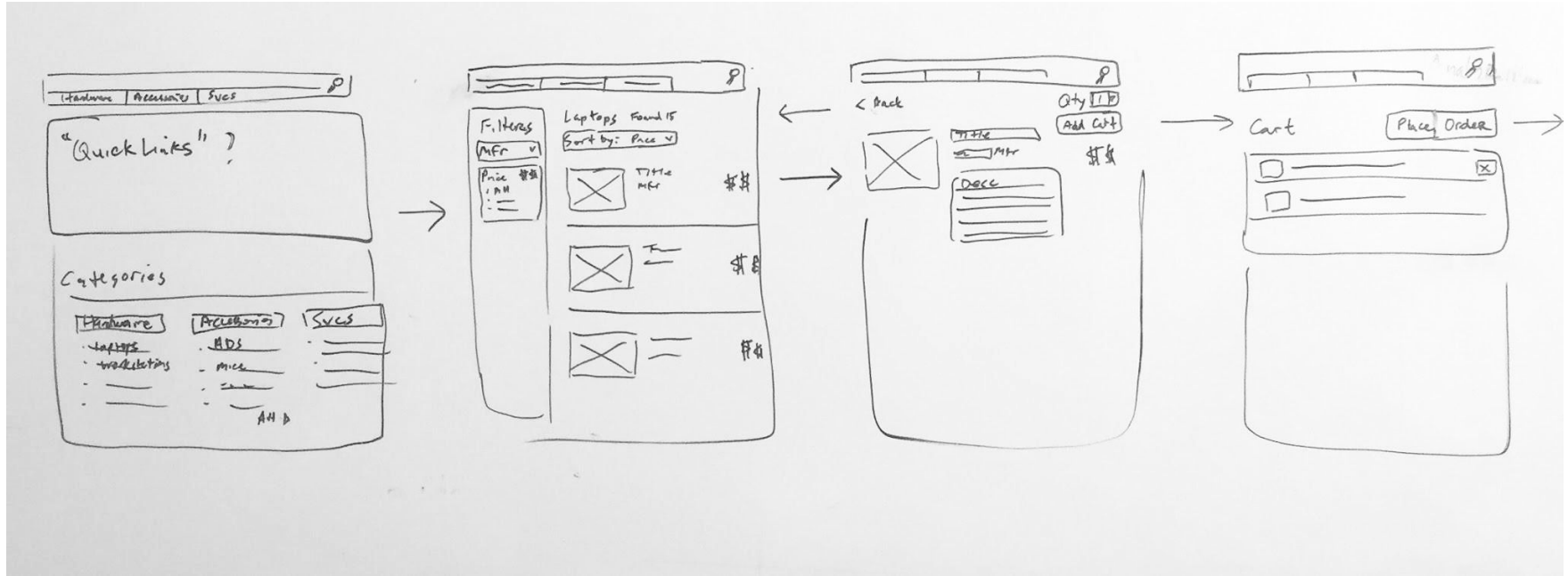
Explore the Solution

Design the solution that empowers users to achieve desired outcomes.

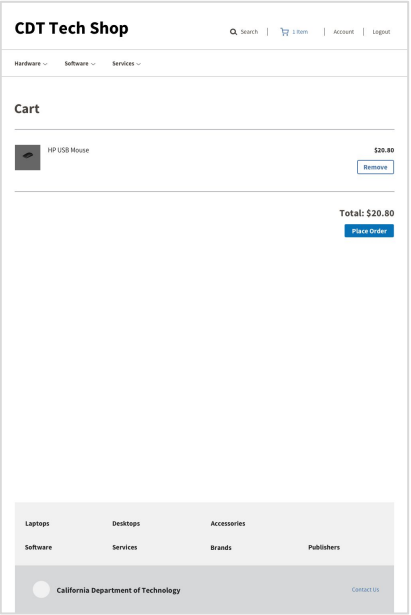
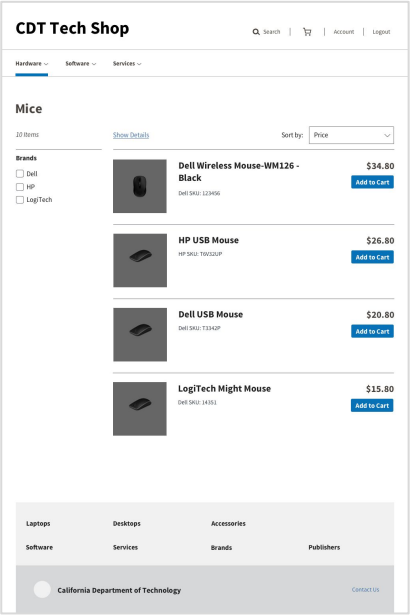
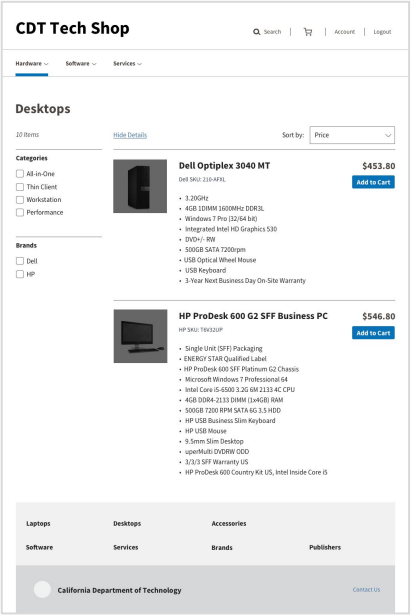
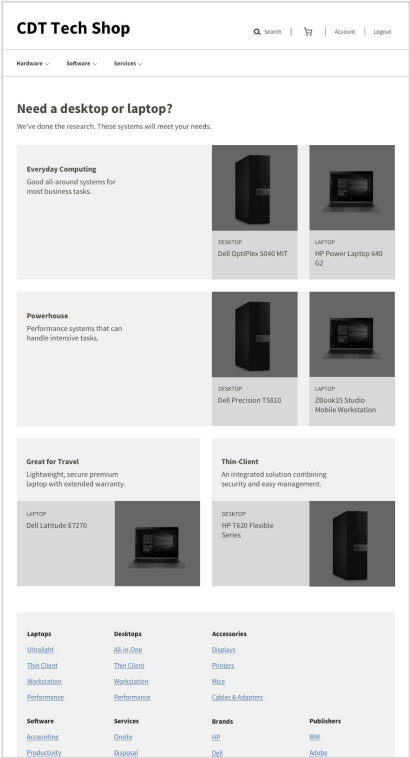
Key Moments



Sketches



Wireframes



Visual Design

CALIFORNIA DEPARTMENT OF TECHNOLOGY

Tech Shop

Account | Logout

Hardware

Software

Services

Desktop or laptop?

Options every hardware need at discounted State contract prices.

POPULAR CONFIGURATIONS

Everyday Computing

Good all-around systems for most business tasks.

LAPTOP

HP Power Laptop 600 G2 SFF Business PC

DESKTOP

Dell Optiplex 3040 MT

Powehouse Users

Performance systems that can handle intensive tasks.

LAPTOP

HP Power Laptop 600 G2 SFF Business PC

DESKTOP

Dell Optiplex 3040 MT

Great for Travel

Lightweight, secure premium laptop with extended warranty.

LAPTOP

Dell Latitude E7270

Thin Client

An integrated solution combining security and easy management.

DESKTOP

HP T620 Flexible Series

CALIFORNIA DEPARTMENT OF TECHNOLOGY

Tech Shop

Account | Logout

Hardware

Software

Services

Laptops

Desktops

Peripherals

Components

UltraLight

Thin Client

Displays

Processors

Standard

Thin Client

Headsets, Microphones, & Speakers

Memory

Performance

Workstation

Keyboards & Mice

Video Cards

Workstation

All-in-One

All-in-One

Cables & Adapters

Storage Devices

Mounting

Docking Stations

LAPTOP

HP Power Laptop 600 G2 SFF Business PC

DESKTOP

Dell Optiplex 3040 MT

CALIFORNIA DEPARTMENT OF TECHNOLOGY

Tech Shop

Account | Logout

Hardware

Software

Services

Account Orders

Year-to-Date: Spending By Category

Laptops

Desktops

Peripherals

Components

\$0

\$1,000

\$2,000

\$3,000

\$4,000

\$5,000

\$6,000

\$7,000

\$8,000

\$9,000

All Orders

120 orders \$12,102 spent

Order #	Date	Requester	Status	\$ Amount
123456	1/1/2017	Jane Doe	Pending	\$1,823
123457	1/1/2017	Jane Doe	Pending	\$1,012
123458	1/1/2017	Jane Doe	Approved	\$9,413

CALIFORNIA DEPARTMENT OF TECHNOLOGY

Tech Shop

Account | Logout

Hardware

Software

Services

Desktops

2 items

Show Details

Sort by: Price

Categories

Thin Client

Standard

Performance

Workstation

All-in-One

Brands

Dell

HP

Return to top

Laptops

Desktops

Peripherals

Components

Software

Services

Brands

Publishers

California Department of Technology

(800) CALL-GOVT info@agency.gov

CALIFORNIA DEPARTMENT OF TECHNOLOGY

Tech Shop

Account | Logout

Hardware

Software

Services

Your Cart

Dell Optiplex 3040 MT

Call 800-231-0476

\$453.80

Qty: 1

Remove

Total: \$453.80

Place Order

Return to top

Laptops

Desktops

Peripherals

Components

Software

Services

Brands

Publishers

California Department of Technology

(800) CALL-GOVT info@agency.gov

Build to Learn

Deliver value, validate and iterate on problem and solution hypotheses.

User Test

A working clickable prototype was created from our design and put it in front of users to gather insights.

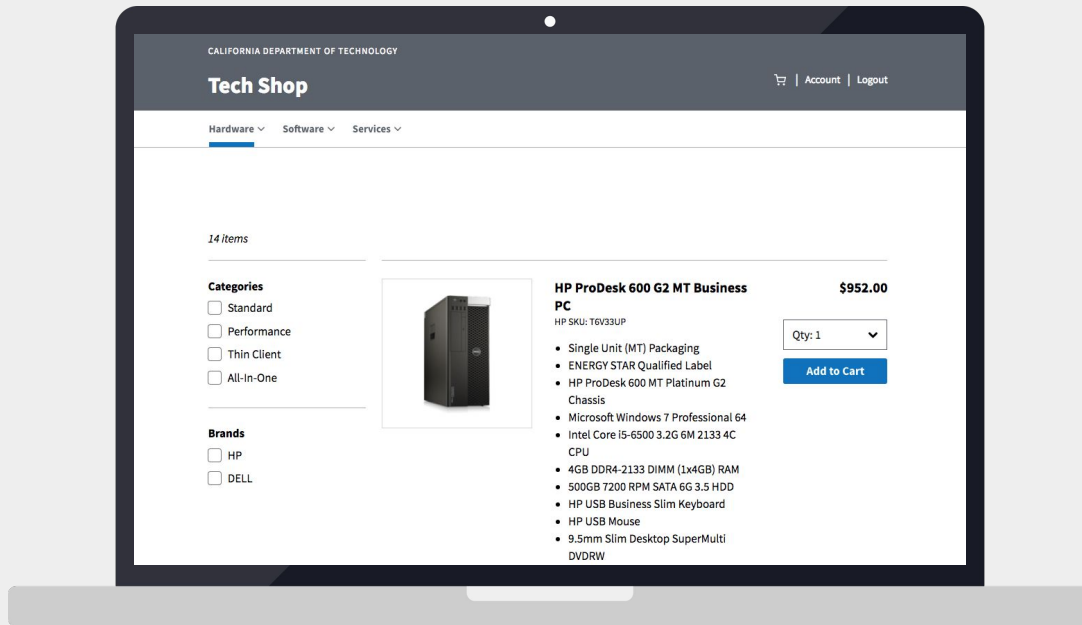
User insights:

“I guess the government doesn’t offer any specials or deals...I always try to look for the best deal”

“I’m very concerned about shipping time.”

“

[Clickable Prototype](#)



Next Steps

Product Perspective

- Hardware customization and checkout experience: how would Requesters like to customize beyond choosing the default?
- What would the Lead Purchasing Organization consider to be objections from State Agencies if the hardware offering list were simplified and shortened based on subject matter expert recommendations?
- Install analytics to see early trends in customer behavior
- Build out item search capability

Dev Perspective

- Harden authentication
- Smarter management of environment variables
- Listen out for how reporting is being used and support optimizations in data handling
- Build out the catalog domain
- Establish backup strategy

Design Perspective

- Begin discovery and exploration of post-order experiences including order approval and fulfillment.
- Audit CDT brand guidelines to better align visual design within CDT service portfolio.
- Create guidelines for website styles and UX patterns.
- Create voice and tone guidelines for content.



Thank You

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