

# Human-Centered Design (HCD) in CCSQ



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# Contents

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- The CCSQ Way
- Definition of Human-Centered Design (HCD)
- Examples of HCD
- Lessons Learned: gov.uk & Epic EHR
- Benefits of HCD

# The CCSQ Way

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The CCSQ way equates to having a culture of openness, excellence, efficiency, evidence, safety, improvement and trust using the various tools in our tool box (i.e., Lean Management Systems, **Human Centered Design**, Quality Improvement, Agile, Key Behavior indicators, etc.) to solve problems and spur innovation that ensures the best outcomes for our customers.

# Human-Centered Design Defined

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**Human-Centered Design (HCD) at CMS** is the process we use to understand the people for which we are writing policies, and creating programs and services.

At the center of our HCD process is participatory design, where we work directly with clinicians, beneficiaries, third party vendors, federal partners, and CMS employees to collaboratively understand the context of their work and engagement with CMS, as well as the solutions we are creating to support them.

# HCD and the CCSQ Way

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HCD supports the CCSQ way specifically by:

- Finding out what people need (*openness, trust*)
- Collaboratively designing solutions with people who will use them (*openness, trust, efficiency*)
- Getting user feedback on proposed solutions (*evidence, improvement, excellence*)

# Agile, Lean, and HCD

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Natural evolution from Lean -> Agile -> HCD

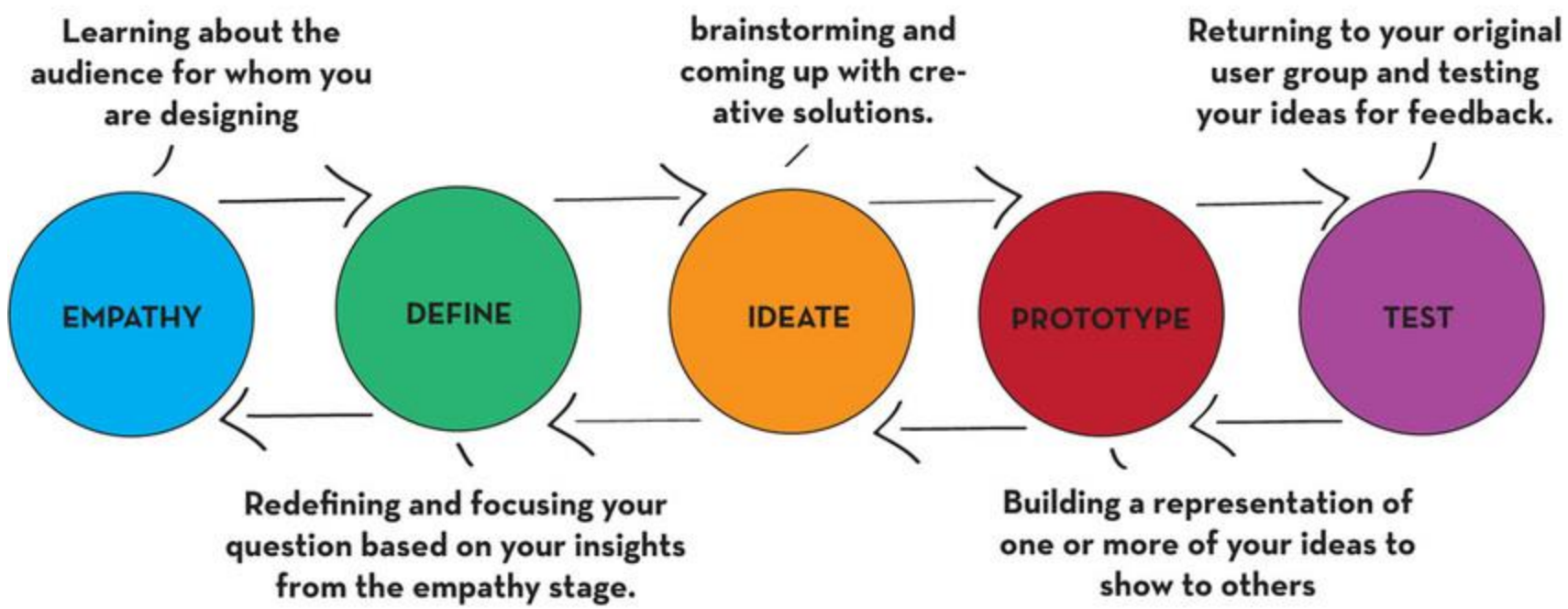
Lean	Agile	HCD
Efficient	Fast	Focused

# HCD is Already Part of Agile & Lean

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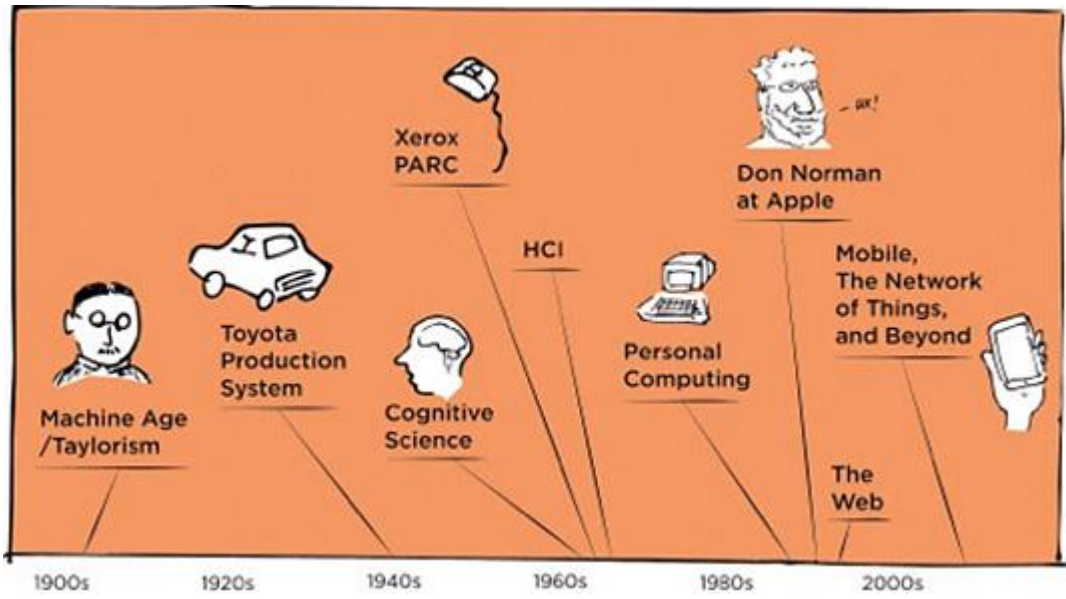
<b>Agile requires obtaining “user feedback”</b>	<b>Lean requires “specifying value for the end customer”</b>
HCD is a process for obtaining actionable user feedback	HCD specifies value for end customers by measuring effectiveness, efficiency, and satisfaction

# HCD Process





# 100+ Years of Human-Centered Design



Leah Buley, A UX Team of One <http://www.uxbooth.com/articles/where-ux-comes-from/>

# Terminology: Humans, Not “Users”

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There are two industries that say “users” to mean consumers of their products & services:

1. Software design
2. Illegal drugs

**Human-centered design** focuses on more than just the screen and its users.

# Human-Centered Design

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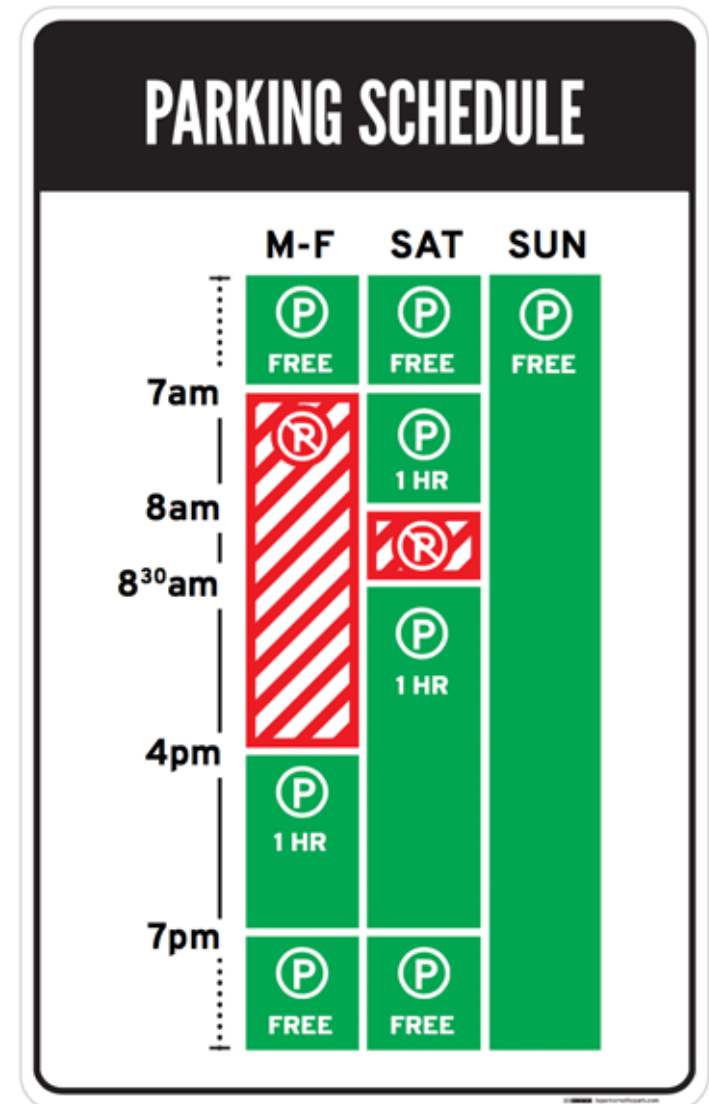
- Not just designing the screens, but also
  - Services
  - Communications
  - Policy
- Reducing burden → easier to understand
- Saving time → easier to learn & use
- Reducing cost → less need for help desk & training

# HCD as Risk Identification & Mitigation

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- Even people who WANT to be compliant often can't figure out how.
  - This failure leads to more expensive service delivery because people don't stay in the cheaper service channels.
  - Multiple encounters across multiple channels = higher cost to serve.
- Find out early if people have a hard time using your product or service.

# HCD Example: Parking Sign Redesign



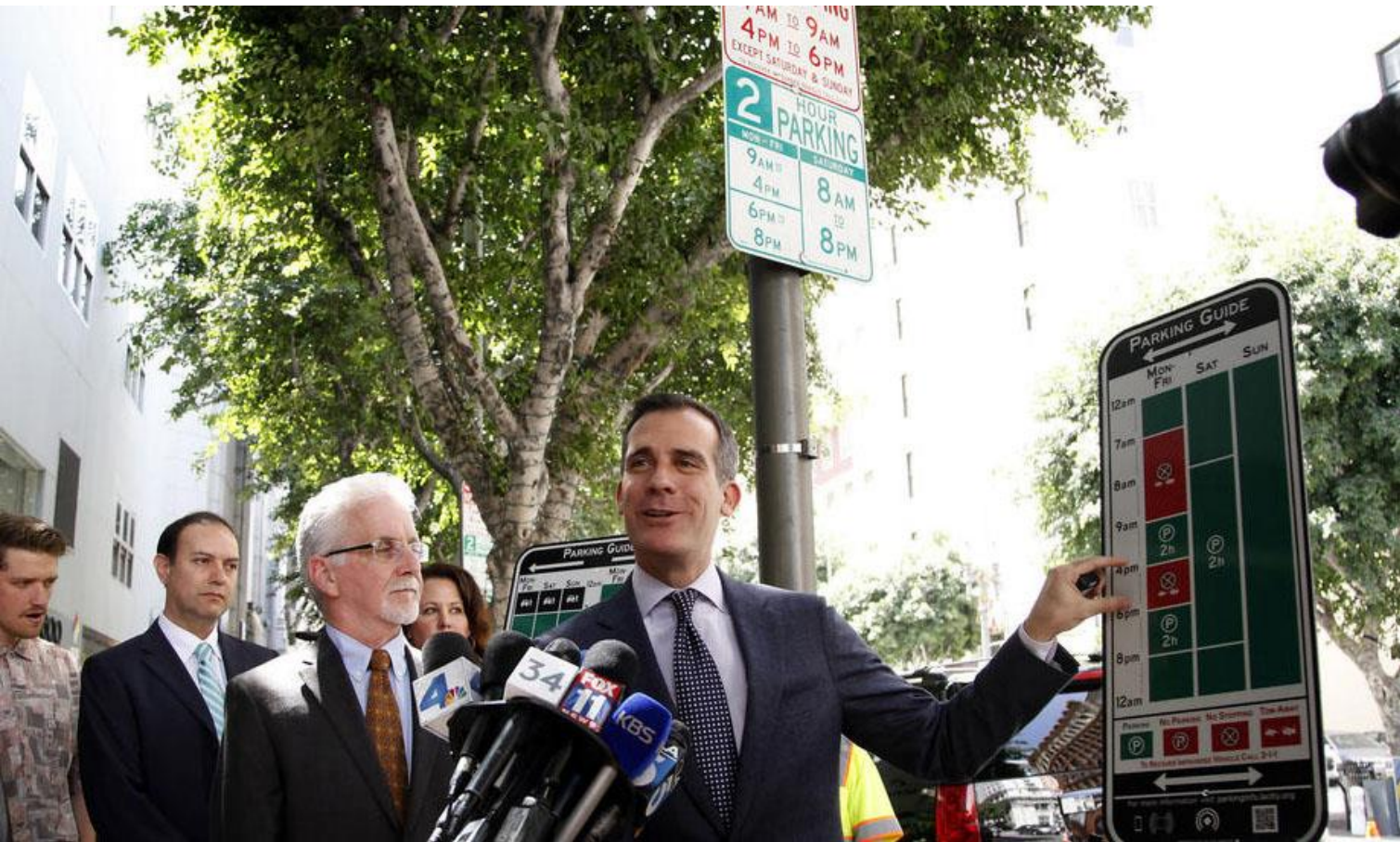
# HCD Example: Parking Sign Redesign



Nikki Syliaenteng <http://nikkisyliaenteng.com/project/parking-sign-redesign/>

Getting community feedback on the proposed redesign

# HCD Example: Parking Sign Redesign



Nikki Silianteng <http://nikkisylanteng.com/project/parking-sign-redesign/>

Pilot programs in Los Angeles, Brisbane, New Haven having great success

# HCD Example: End Stage Renal Disease Quality Reporting System (EQRS)

- MVP released June 6, 2017
- Surfaced 9 common CROWNWeb tasks for ESRD facilities
- 94% task completion rate – without needing help

The screenshot displays the EQRS Facility Dashboard for OCT Dialysis (123456 1245324995). The dashboard is divided into several sections:

- Overview:** A summary of form completion counts for Form 2728 and Form 2746.
- Form 2728:** A table showing 0 New, 1 Due, and 8 Past due forms.
- Form 2746:** A table showing 0 Due and 6 Past due forms.
- Notifications & Accretions:** A section showing 9 Unresolved notifications.
- System Discharges:** A section showing 0 discharges for 2017 and 0 for 2016.
- Form 2728 Records:** A detailed table of 9 records with columns for CROWNweb CUI, Patient Name, Due Date, Type, Status, Form State, and Navigation.

CROWNweb CUI	Patient Name	Due Date	Type	Status	Form State	Navigation
2104863172	Patient, Nosocomed	02/15/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104863200	Patient, Second	03/18/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104863800	Incenterpatient, Imanew	04/15/2017	Initial	Past Due	Saved	<a href="#">Manage Form 2728s</a>
2104864932	Patient, Nosocomedid	04/29/2017	Supplemental	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104865919	Patent, Billybob	05/16/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104865430	Patient, Shesmy	05/16/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104865600	Patient, Discharge	05/30/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104865450	Patient, Thisisyour	06/06/2017	Initial	Past Due	Missing	<a href="#">Manage Form 2728s</a>
2104866000	Patient, Janis	08/15/2017	Initial	Due	Missing	<a href="#">Manage Form 2728s</a>

Showing 1 to 9 of 9 results Page Size 10/10 40/Prev 1 Next 40



# HCD Example: End Stage Renal Disease Quality Reporting System (EQRS)

- Baseline measurement
- 72% task completion without needing help

The screenshot displays the CROWNWeb application interface. At the top, there is a navigation bar with tabs for 'CROWN Home', 'Patients', 'Clinical', 'Facilities', 'Form 2744', and 'CROWN Reports'. Below the navigation bar, there is a 'Home' button and a box showing the 'Version Number : CROWNWeb 5.0.1-18534'. On the right side, there is a 'Show Help' link. The main content area is titled 'System News' and contains a 'Welcome to CROWNWeb!' section. This section lists various features available in the production environment, which contains startup data copied from SIMS, the ESRD Patient Registry maintained by the ESRD Networks. The features include searching, adding, saving, editing, submitting, and printing facility records and personnel records; admitting and discharging patients; adding, editing, and submitting patient treatment records; searching, editing, and submitting patient records; entering information for 2728 forms (Initial, Supplemental, and Re-entitlement patients); entering 2746 forms; printing blank and pre-populated forms; verifying patients and data using the PART feature; searching, adding, editing, and submitting clinical lab test results and vascular access information; adding, editing, and submitting facility preferences; creating and printing patient rosters; and running Audit reports.

**CROWN Home** | **Patients** | **Clinical** | **Facilities** | **Form 2744** | **CROWN Reports**

[Home](#)

Version Number : CROWNWeb  
5.0.1-18534

[Show Help](#)

### System News

#### Welcome to CROWNWeb!

Below is a listing of the CROWNWeb features in this release. The production environment contains startup data copied from SIMS, the ESRD Patient Registry maintained by the ESRD Networks.

- Users will be able to search, add, save, edit, submit, and print facility records.
- Users will be able to search, add, edit, submit, and print facility personnel records.
- Users will be able to admit to and discharge patients from a facility.
- Users will be able to add, edit, and submit patient treatment records.
- Users will be able to search, edit, and submit a patient record.
- Users will be able to enter information associated with the 2728 form for Initial, Supplemental, and Re-entitlement patients (including Initial Dialysis, Initial Transplant, Supplemental Training, Supplemental Transplant, and Re-entitlement forms).
- Users will be able to enter a 2746 form for a patient.
- Users will be able to print blank 2728 and 2746 forms, along with pre-populated 2728 and 2746 forms for patients.
- Users will be able to verify patients and patient data using the PART feature.
- Users will be able to search, add, edit, and submit clinical lab test results and vascular access information for patients.
- Users will be able to add, edit, and submit facility preferences for clinical data.
- Users will be able to create and print a patient roster for a facility.
- Users will be able to run Audit reports for all data added, updated, or deleted in CROWNWeb.

Internet Explorer 7 users should verify the following setting before using CROWNWeb. Close all Internet Explorer windows and open a new Internet Explorer browser window. Then go to Tools -> Internet Options, select the Advanced tab, scroll to the Security section and ensure the "Enable Native XMLHTTP support" option is NOT selected. If the option is selected, apply this change, then return to the application.

# HCD Example: End Stage Renal Disease Quality Reporting System (EQRS)

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- 22% improvement in effectiveness
- Help desk calls decreased 54% in first month after MVP release
- Sustained decreased in EQRS help desk calls since release
- Compliance went up by December 2017
- Training costs should decrease with each release

# How Bad Design Killed Jenny

The screenshot shows the Epic Hyperspace interface for a patient named 'Zztest, Ad'. The patient's MRN is 18774711, DOB is 4/15/1950, and they are a 60-year-old male. The patient has no known allergies and is on several medications, including PREVPAC Pack, lisinopril, tramadol, fluticasone, and ranitidine. The interface is cluttered with multiple overlapping panels and a complex navigation bar. A green arrow points to the 'Alerts' field in the patient header, which shows 'Basic' and 'HM'.

**Patient Header:** Zztest, Ad | MRN: 18774711 | DOB: 4/15/1950 | Age: 60 yea | Sex: M | Allergies: No Known Allergies | PCP: PCP, NO | Type: (None)\* | FSC: \* BX35, HN35 | Online: Basic | Alerts: HM

**Demographics:** AD ZZTEST | 123 Easy St | 60 year old male | XXX, XX 99999 | Home: 999-999-9999

**Problem List:** Chronic | ESOPHAGEAL REFLUX | ASTHMA NOS W/O STATUS ASTHM | ESSENTIAL HYPERTENSION NOS | ERRONEOUS ENCOUNTER

**Health Maintenance:** Overdue | Due On | Due Soon

Test	Date
CREATININE	04/15/1950
INFLUENZA VACCINE	09/01/2010
LIPID SCREENING	04/15/1985
PNEUMOCOCCAL VACCINE (PNEUMOVA)	04/15/1952
POTASSIUM	04/15/1950
TDAP VACCINE	04/15/1961
UNIVERSAL HIV SCREENING DISCUSSION	04/15/1963
VARICELLA ZOSTER VACCINE (ZOSTAVAX)	04/15/2010
COLORECTAL CANCER SCREENING DISCUSSION	08/02/2011

**Medications:** PREVPAC Pack, lisinopril (PRINIVL, ZESTRIL) 10mg Tab, tramadol (ULTRAM) 50mg Tab, fluticasone (FLONASE) 50mcg Nasal Susp, PREVPAC (PREVPAC) Pack, ranitidine (ZANTAC) 300mg Tab

**Immunizations/Injections:** None

**Significant History/Details:** Tobacco: Not on File, Alcohol: Not on File, 3 open orders, Language: UNKNOWN

**Specialty Comments:** No comments regarding your specialty

**Family Comments:** None

# HCD in Another Government: gov.uk

Poor usability affects the government's ability to achieve policy outcomes.

The standard VAT rate is

# 20%

## VAT rates for goods and services

Rate	% of VAT	What the rate applies to
Standard	20%	Most goods and services
Reduced rate	5%	Some goods and services, eg children's car seats and home energy
Zero rate	0%	Zero-rated goods and services, eg most food and children's clothes

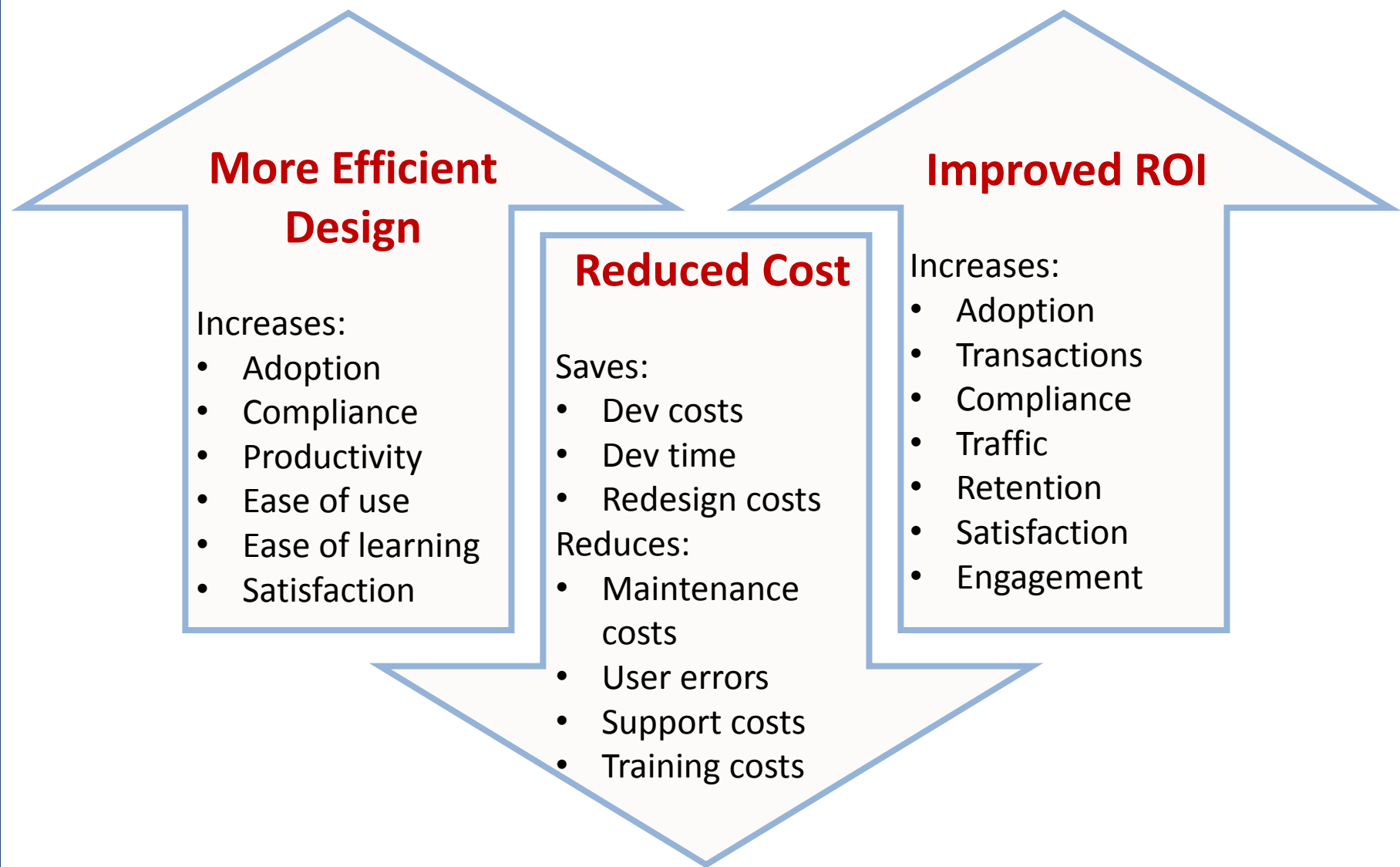
The screenshot shows the HM Revenue & Customs website. The main heading is "VAT rates, thresholds, fuel scale charges and exchange rates". The page includes a navigation menu with "Home", "Contact us", "About us", "Jobs", "Accessibility", "Feedback", and "Help". There is a search bar and a "Tax agents & advisers" button. The page is categorized for "individuals & employees", "employers", and "businesses & corporations". The main content area includes a breadcrumb trail: "You are here: Home > VAT > VAT forms, rates, thresholds and Notices > VAT rates, thresholds, fuel scale charges and exchange rates". The main heading is "VAT rates, thresholds, fuel scale charges and exchange rates". The page includes a "Do it online" section with links for "Submit your VAT Return", "Register for VAT", "Change your VAT registration details", "Online Demonstrator", and "Commercial software options". There is also a "Tools" section with a link for "When to register for VAT". A "See also" section includes links for "VAT rate change", "VAT Rates, thresholds, exchange rates", "VAT news, Notices, Information Sheets and guidance", "VAT forms", "Contact us with VAT queries", and "Technical VAT manuals".

# Lessons from gov.uk Redesign

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- **“Your organization will benefit more from your moving to HCD than the users ever will.”**
  - Compliance
  - Strategic goals
- **“Orient everything in your organization around real user journeys.”**
  - Name services after people’s needs, not the organization’s
  - People should never be able to tell their single experience is managed by 8 different contractors
- **“Seek the truth, even if it’s ugly.” (Lean: “Embrace the horrors.”)**
  - Leaders: Break through any inclination to hide the ugly stuff from you
  - Everyone, even leadership: 2 hours of user observation every 6 weeks makes better products & services

# Benefits of HCD



# Questions?

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- Ginny Valles-McCullough, ISG
- Benno Schmidt, ISG
- Catharine Robertson, PM3