AN ANALYSIS OF DESIGN SYSTEMS, THEIR EVOLUTION AND THEIR USE IN GOVERNMENT

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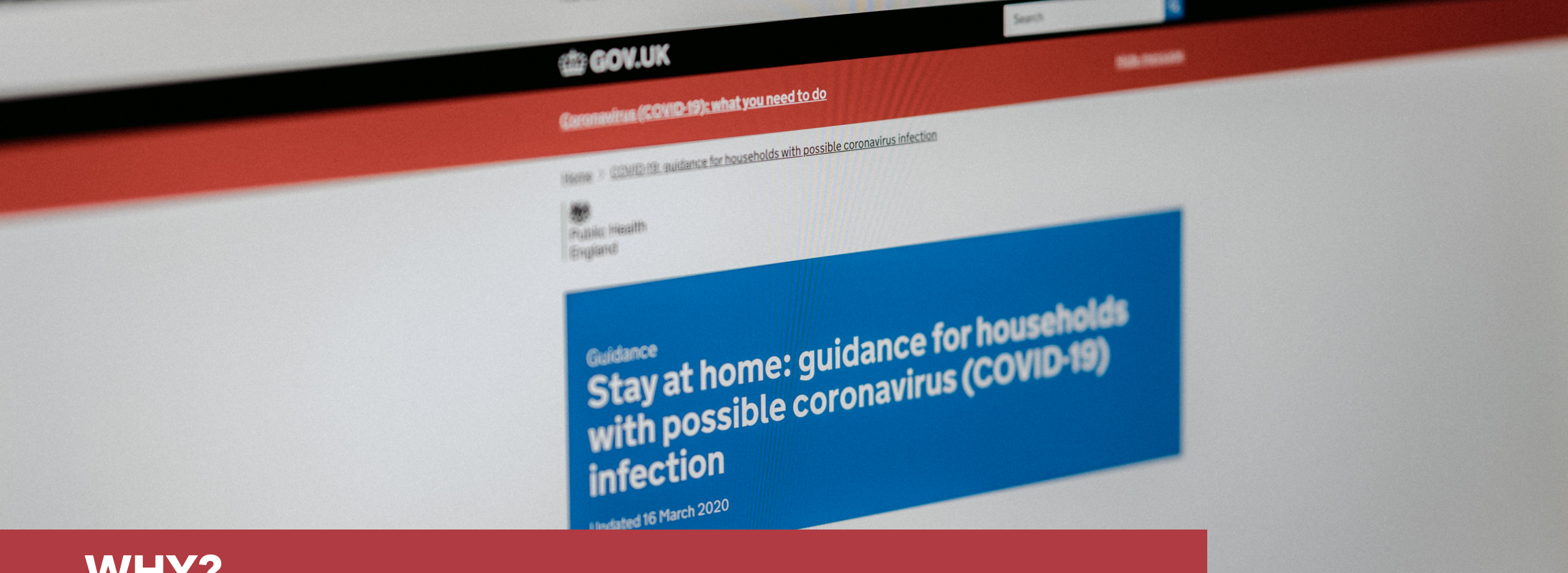
WHY?

The ever-increasing rate of adoption of the internet by citizens has pushed many governments to transition their traditionally offline presence, online.

This, however, has presented a new set of challenges for these traditionally offline organizations to tackle; how do you have a user friendly, unified, and consistent presence in the digital realm?

The answer to this complex question for many governments in 2022 is to follow in the path of industry and take on creating their own design systems to manage and unify their digital presence.

WHAT ARE DESIGN SYSTEMS & WHAT ARE THEIR ATTRIBUTES?

DEFINING A DESIGN SYSTEM

The "idea" of what a design system is ever-evolving...

In the most abstract sense, a design system is made up of a **philosophy**, **interaction patterns**, and **a content format.**

DEFINING A DESIGN SYSTEM

- Often are a **group** of **interaction patterns**, **guides**, **advice**, and **components** (or examples) presented *cohesively in one place*,
- They most often guidance for visual elements of a design
  - such as colour pallets, typography, user-interaction flow, layout, animation, and shape
- They most also often offer guidance on non-visual elements used throughout a design,
  - such as offering advice on managing tone, personality, and branding in content within the design system
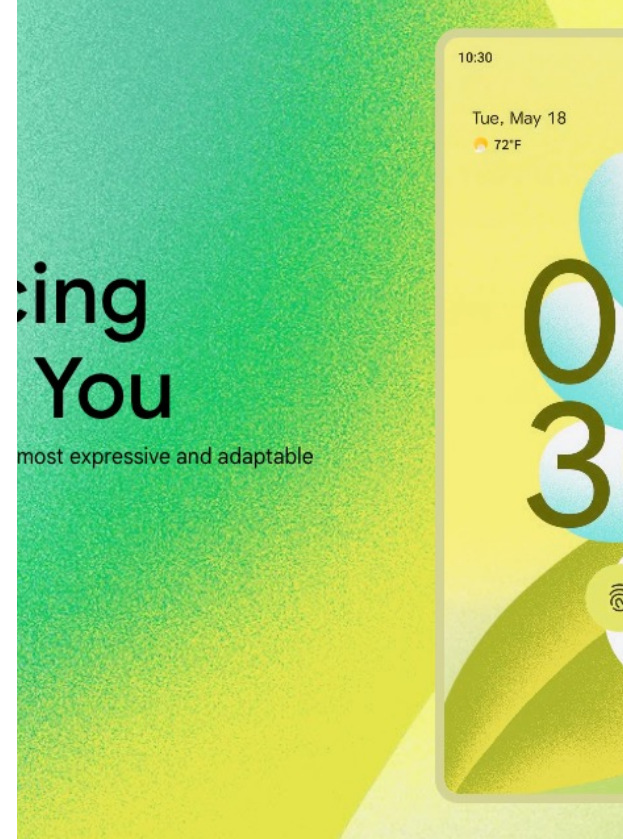
EVOLUTION OF DESIGN SYSTEMS

- **1913-1930's** – Bauhaus Movement
- **1950-1960's** – Swiss Style/International Typographic Style
- **90's-2010** – Bespoke Designs on the Web
- **2010's** – Twitter Bootstrap and other CSS Frameworks
- **Post 2010's** – Style Guides and Design Languages
- **Now** – Design Systems

GOVERNMENT AND DESIGN SYSTEMS

GOVERNMENT AND DESIGN SYSTEMS

- Early days of the internet, each website has their own design.

- As time wore on, in the 2010s, the government realized they needed a solution to standardize behaviour (for responsiveness) → **Web Experience Toolkit**

- **2019** – With the realization that "One size doesn't fit all" the Digital Transformation Office (DTO) created the Canada.ca Design System.

EXPLORING, ANALYZING AND COMPARING CANADA'S DESIGN SYSTEM

- What does the Canada.ca Design System include, and does it meet the **minimum criteria** to be considered a design system?

ANALYSIS CRITERIA

- From our *defining a design system* slide we know that…
  - A basic design system, should, at a **broad view**, include the following:
    - ➢ A guiding ethos/vision/philosophy
    - ➢ Interaction patterns
    - ➢ A content format guide
  - From a more ***narrowed view***, it should include the following:
    - ➢ Should be presented as a **group of interaction patterns**, **guides**, **advice**, and **components** (or examples).
    - ➢ These guides should be presented **cohesively in a singular place**
    - ➢ Should include but are not limited to, offering guidance for **visual elements** of a design, and **non-visual** elements used throughout a design

EXPLORATION & ANALYSIS

✅ Meets the broad definition

→ Includes a philosophy

"[to allow for] designers and developers to create a more usable, consistent and trustworthy online experience for people who access Government of Canada digital services.

→ Includes interaction patterns

→ Includes a content style guide

Français

Government of Canada   Gouvernement du Canada

Search Canada.ca

MENU ⌄

Canada.ca > About Canada.ca

Canada.ca design system

Use this design system to provide a more usable, consistent and trustworthy online experience for people who access Government of Canada digital services.

Template and design pattern library
User-tested templates, page layouts, design patterns, guidelines, and code samples

Canada.ca Content Style guide
Writing principles and techniques to make content clear and accessible to all

Canada.ca Content and Information Architecture Specification
Who has to use the Canada.ca design system, mandatory elements, how to organize content and design principles

Continuous improvement of web content
Choosing what to improve, organizing and preparing your team, research and prototyping, designing content, monitoring and measuring success

Canada.ca blog
Evidence and insights on improving information and services on Canada.ca

Latest changes to the Canada.ca design system
Latest changes to the design system, templates and patterns, style guide and other tools

Find guidance

Filter items [   ]   Showing 1 to 100 of 124 entries | Show [100 ⌄] entries

Name ⬆⬇	Source ⬆⬇	Description ⬆⬇
A case for descriptive link text	Blog post	Clear link text can help thousands more people get to the Canada.ca content they need quickly and easily.
Abbreviations and acronyms	Content Style Guide	Don't use an abbreviation or acronym unless it's better known to the widest audience than its long-form equivalent
Act profile page	Template and pattern library	Gives a 1 or 2 sentence description of the act, allows people to read the legislation, and relates an act to topics, institutions, ministers and other legislation
Adding structured data on Canada.ca pages	Designing content	How to add structured data to enhance search results

EXPLORATION & ANALYSIS

- Diving in deeper into the design system and exploring it's included guidance, it's clear that the system is quite well rounded and developed.

- It includes **41 combined** components and design patterns,
  - each has their own sample code (if applicable), usage guidance, warnings against incorrect use and various user experience pitfalls, as well as instructions on how to best implement each given pattern or component.

- Non-visual guidance as well: how to use the Canada.ca Domain, tone management, etc..

- All presented cohesively in one place/system.

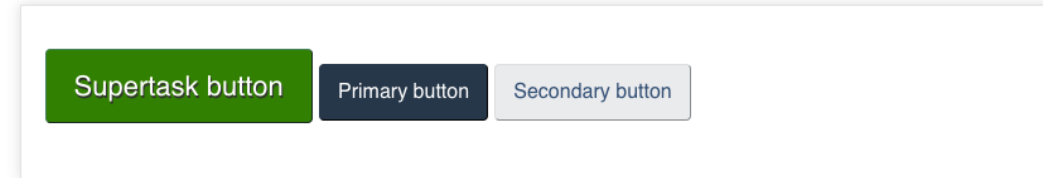✅ Meets our narrowed down, specified definition.

🎉 **IT IS A DESIGN SYSTEM**

Canada.ca design system

Buttons

Last updated: 2021-01-20

Buttons are clickable objects intended to encourage a person to take action.

Supertask button   Primary button   Secondary button

On this page

- When to use
- What to avoid
- How to implement
- Research and blog posts
- Latest changes
- Discussion

When to use

Use the button pattern to execute actions or commands that will change the system state at the front or back end, for example "Add comment," "Submit," "Send."

Use buttons when:

- helping a person into or through a transaction such as "Sign in"
- invoking functionality, for example "Share this page"
- providing a persistent set of UI controls across a series of pages, for

THE CANADA.CA DESIGN SYSTEM COMPARED TO OTHER GOVERNMENT INITIATIVES (GOV.UK)

Search Design System

Get started   Styles   Components   Patterns   Community

Design your service using GOV.UK styles, components and patterns

Use this design system to make your service consistent with GOV.UK. Learn from the research and experience of other service teams and avoid repeating work that's already been done.

Get started ›
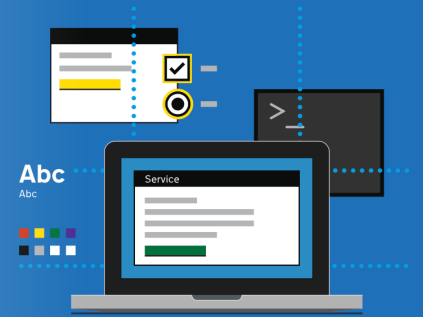
What's new

7 April 2022: We've published a new pattern to help users to 'Confirm a phone number'. We've also updated the pattern to help users to 'Start using a service'.

Sign up to get update emails about the Design System.

Styles

Make your service look like GOV.UK with guides for applying layout, typography, colour and images.

Browse styles

Components

Save time with reusable, accessible components for forms, navigation, panels, tables and more.

Browse components

Patterns

Help users complete common tasks like entering names and addresses, filling in forms and creating accounts.

Browse patterns

Community

The GOV.UK Design System is for everyone, with a strong community sitting behind it. It brings together the latest research, design and development from across government to make sure it's representative and relevant for its users.

GOV.UK

- Compared to the Canadian Canada.ca Design System, it quickly becomes apparent that the GOV.UK Design System is a lot more mature, well developed and well thought out.

- The system includes **31 individual components**, and **28 user researched patterns**, marking a total of **59** combined components and patterns ,

- The system's documentation separates between, "styles", "components", and "patterns" in its guide
  - this separation helps distinguish between reusable UI elements themselves and the contexts/tasks (patterns)
  - For example, the usage of a text input component to ask for a SIN numbers or full names, which are patterns

GOV.UK VS. CANADA.CA

- Within each component or pattern, the guidance provided is like that of the Canadian design system (when to use the component or pattern, when to avoid it, code examples, etc..),
  - However, there is often an additional section available entitled "Research on this component/pattern" under each component or pattern
  - While also available on the Canada.ca Design System, it is not as prevalent & does not cite external sources such as W3C.
- GOV.UK Design System appears to encompass guidance on a greater number of "standard" components.
  - File upload elements, text input fields and selection boxes.
  - The Canada.ca Design System also lacks pattern guidance on things such as names input, phone number input, gender, or sex inputs, etc.., all of which are regularly part of government forms & operations.

Ask users for...

Addresses

Bank details

Dates

Email addresses

Equality information

Gender or sex

Names

National Insurance numbers

Passwords

Payment card details

Telephone numbers

Help users to...

GOVERNMENT DESIGN SYSTEMS (GOV.UK & CANADA.CA) COMPARED WITH INDUSTRY DESIGN SYSTEMS
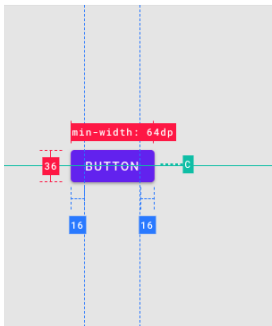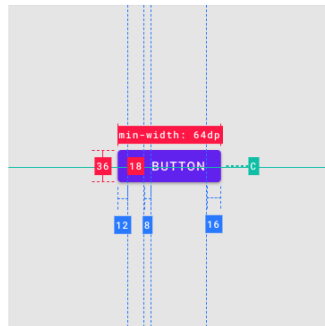
MATERIAL DESIGN

- Material Design is one of the most widely used design systems in the world, with nearly 3 billion Android based devices employing it.
    - This means it has the ability to set general user expectations of design patterns and components.

- It includes 30 re-usable components, 56 individual defined patterns, including guidance for machine learning, sound, voice interactions, motion, etc…

- It is by far the most developed out of all three design systems.

COMPARING MD, GOV.UK, & CDS
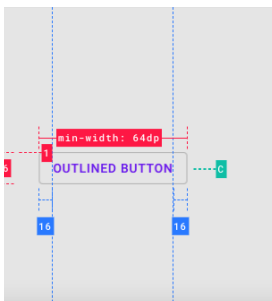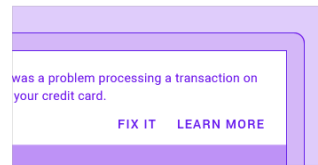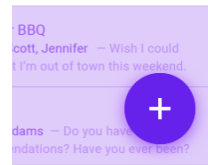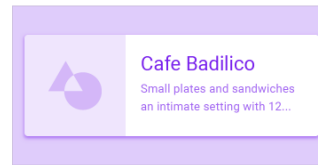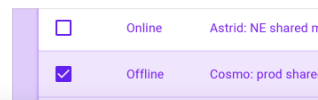
- Due to how widely Material Design is used, and it's use on many platforms it has some specialized components, some of which wouldn't be applicable to use on the UK or Canadian Design systems

- However, there are some additions not present in both the other design systems
  - Specs – which provide exact design dimensions and specifications, which helps with implementation on other platforms

IMPROVEMENTS & SUGGESTIONS

- From Material Design:
  - Dark Mode (For both GOV.UK and Canada.ca)
  - Progress indicators (For both GOV.UK and Canada.ca)

- From GOV.UK For Canada.ca
  - Greater guidance on things such as name input, gender & input, etc…
  - Expanding in built components to encompass more standard UI components in web applications
  - Greater separation between "patterns" and components to help make the design system more generic

PROBLEMS FACING IMPROVING DESIGN SYSTEMS IN GOVERNMENT

GOVERNMENTS ARE COMPLEX.

- Governments technology initiatives don't provide the same level of flexibility as their private sector counter parts.

- Governments need to ensure that citizens view websites as professionally crafted, and safe.

- Websites may provide time-critical, time-sensitive services, which quite literally could be life changing.

- Governments have a hard time focusing on User Centered design.

"WHAT IF THIS ENDS UP IN THE GLOBE?"

- A common saying within the Canadian Public Service.

- Governments in the UK have been able to get over this fear, but Canada hasn't made this transition yet.

*"When you add up all the original (non copy+pasted) text in our various documents, presentations, justifications, and rationales, we get 39,230 words…***In our case, it meant that for our 12-page site, we ended up writing almost as much as the Great Gatsby**" - Paul Craig*

REFLECTION & CONCLUSION

CONCLUSION AND REFLECTION

- In conclusion, after review of what design systems are, what they entail, it's clear that the Canadian design system has made great in-roads and has all the characteristics of a great design system (often going above and beyond).

- However, there is still much to be improved, especially when compared with other government initiatives such as the GOV.UK design system

- Additionally, when compared to those in private industry, it may be beneficial for these design systems to adopt some patterns and components which have been standardized.

- Its clear that there are bottle necks to adopting a more research intensive, user-centred approach to design, including the **structure** of government and other factors.

THANK YOU & ACKNOWLEDGEMENTS.

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