



# Citizen Experience Design

for Digital Transformation

By Vanessa Colina

Foreword by Nuria Simo  
CIO and General Manager  
of the Inter-American  
Development Bank

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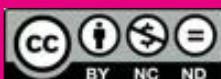
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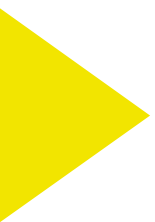
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## Foreword

# Foreword



Now, more than ever, organizations are recognizing that digital transformation is not only necessary, but urgent and unavoidable, to survive in a challenging post coronavirus disease 2019 (COVID-19) economy.

It has been recognized for decades that successful digital transformation requires the people involved to change substantially in the way they think and act. How they perform their jobs in the case of the employees, the way they buy and consume products and services in the case of customers, and last, but not least, in how they access and interact with digitally enabled public services in the case of citizens.

Humans are at the center of digital transformation. Technology, processes, products and services have to be designed for and with humans, provide a pleasant experience, and bring value to everyday life if we want them to be easily adopted.

Lessons learned from many organizations show that making huge investments in two main categories: technology and training, are very expensive and can slow progress towards transformation. Intuitive and easy-to-use solutions require minimal or no training at all.

For many, the term «digital transformation» means to incorporate an array of technologies such as cloud technology, process automation, data and analytics, mobile; as well as emerging technologies such as blockchain, internet of things or artificial intelligence, and place them in the center of the organization's processes. In reality, humans are at the center of a digital organization, and to become one, we should start with the people involved in the end-to-end experience: customers, citizens, consumers, partners, vendors, stakeholders, and society at large; understand their real needs; and design technology that adapts to them. Not the other way around.

As a result of this imperative, User Experience Design (UXD) emerged as a new field to design products, services and solutions based in the end-to-end user experience.

Vanessa Colina, the User Experience Design Lead at the Inter-American Development Bank, guides the reader through the origins, core components, case studies, suggested metrics and why it is absolutely necessary that governments put Citizen Experience Design at the center of their Digital Transformation.

**NURIA SIMO**

CIO of the Inter-American Development Bank





# Introduction

# Introduction

How many times have you heard the term «human-centered design»? How about «human-centered technology»? These terms are often used interchangeably in conversations involving digital transformation. The purpose of this paper is to provide a path for policymakers to start considering user-centric design to better understand citizen's characteristics, challenges, and needs.

This paper aims to focus on **User Experience Design (UXD) rather than Design Thinking.**<sup>1</sup>

While Design Thinking has been widely recognized as a user-centered approach to designing better products, the differences with UXD are clear:

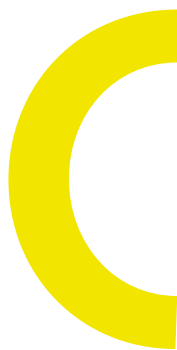
- **Design Thinking is a framework.** A process to tackle big problems using pre-established phases to arrive at a human-centered solution. User Experience Design is a multi-disciplinary field. Professionals within the field can use different user-centered frameworks to work on big and small problems including, but not limited to, Design Thinking.
- **Design Thinking is based on the methods and processes designers use.** The framework can be facilitated by non-designers and applied to any field. User Experience Design, on the other hand, is usually practiced or led by designers and practiced in the technology sector.
- **Design Thinking is mostly used to create new solutions in highly uncertain situations.** It is a highly effective framework for innovation. User Experience Design works the end-to-end experience of new and mature products and services.

<sup>1</sup> <https://designthinking.ideo.com>



In summary, User Experience Design is the field studying and practicing the design of useful and user-friendly experiences, while Design Thinking is just one of the tools in a designer's toolbox.

One of the aims of this paper is to make the case of why the time is now to shift from a service economy to an experience economy, to propose **three core components** as fundamental for the implementation of User Experience Design:



- 1** System Thinking
- 2** Hierarchy of Needs
- 3** The Scientific Method

The guidelines and case studies presented here are meant to be **timeless, high-level, and strategic**. There is a **focus on principles** throughout the publication that can be used and adapted for any particular starting point.

The paper also describes **suggested metrics** to measure and improve the quality of the citizen experience.

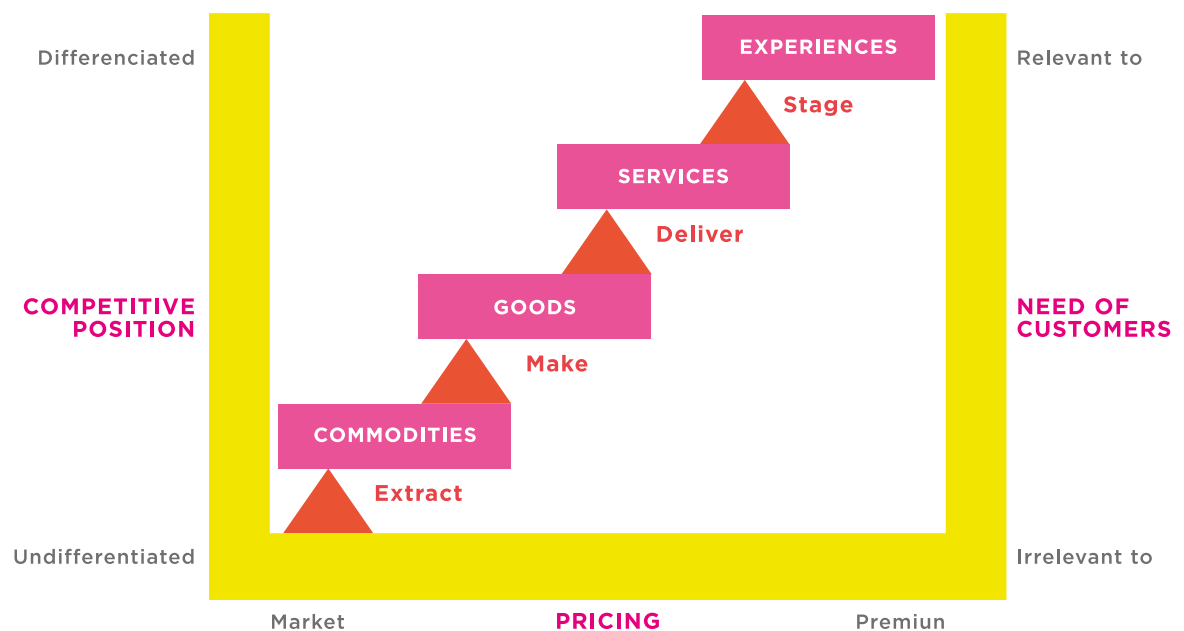
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# Why Citizen Experience Design for Digital Transformation: The Rise of the Experience Economy

# Why Citizen Experience Design for Digital Transformation: The Rise of the Experience Economy

**FIGURE 1**  
**The Progression of Economic Value**  
where each successive offer greatly increases in value because the buyers find each offer more relevant to what they really need. Graph taken from «The Experience Economy».

Advances in technology have made digital services more available than ever to the average citizen. Baseline expectations of how a service is provided have changed as well, widening the gap between what is experienced on a daily basis from private providers and what is experienced when users engage with government services. It is no longer enough to provide a service; the service now needs to respond to individual needs.



The service needs to provide a unique experience. The basis of this experience economy<sup>2</sup> is how much an individual is understood by and engaged with the service provider.

<sup>2</sup> B. Joseph Pine II, James H. Gilmore (2011). The Experience Economy

In the private sector, failure to provide the best customer experience drives customers away to the competition. But what happens in the public sector? **The experience economy is ushering in two major changes relevant to policymakers leading digital transformation efforts:**

- 1 Digital citizens are hyperaware of what is possible with technology.** They expect the gap between the quality of digital services from the private to the public sector to close, not widen.<sup>3</sup> They are expecting personalized and efficient services from providers and will not make concessions for their governments. A poor citizen experience could lead to a negative perception of government performance, lack of support, trust, and overall discontent.<sup>4</sup>
- 2 Non-digital citizens, on the other hand, present a different challenge: how will they access services.** Well-designed technology can improve the quality of services, and the emphasis on digital transformation in the public sector is proof. However, the digital divide in the region shows fewer digital citizens than those in the developed world.<sup>5</sup> Just as recently as 2018, the Inter-American Development Bank (IDB) cited «lack of understanding of the real citizen experience» as one of the main reasons citizens don't engage with or successfully access government services.<sup>6</sup> Fail to understand the citizen experience, and this segment of the population continues to be left behind at the same rate digital transformation efforts replace traditional services.

Now is the moment to recognize the shift from a service to an experience economy, meet citizen expectations, and provide inclusive and timely services for the benefit of all.

<sup>3</sup> <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/digital-public-services-how-to-achieve-fast-transformation-at-scale>  
<sup>4</sup> <https://www.oecd-forum.org/posts/29680-going-digital-restoring-trust-in-government-in-latin-american-cities>  
<sup>5</sup> OECD (2020) Latin American Economic Outlook 2020 <https://doi.org/10.1787/e6e864fb-en>  
<sup>6</sup> IDB (2018) Wait No More: Citizens, Red Tape, and Digital Government <http://dx.doi.org/10.18235/0001150>


The background is a solid dark red color. It is decorated with various geometric shapes in two colors: a light pink and a medium orange. These shapes include circles, semi-circles, triangles, rectangles, and curved segments, some of which are partially cut off by the edges of the frame. The shapes are arranged in a non-repeating, abstract pattern.

# Introducing User Experience Design

# Introducing User Experience Design

## O R I G I N S

Cognitive psychologist and designer Don Norman coined the term «User Experience» in 1990, describing it as:



**«User Experience encompasses all aspects of the end-user's interaction with the company, its services, and its products»** Don Norman

User Experience Design principles, however, can be traced back to the **early 20th century** with the introduction of the Second Industrial Revolution. After transitioning from hand production methods to machines during the First Industrial Revolution, a new group of innovations emerged that led to the mass-production of goods, assembly lines, and systems in its second phase.

The **Second Industrial Revolution** was also known as the Technological Revolution and during this period it became imperative to improve processes, leading to rapid standardization and industrialization.

Fredrick Winslow Taylor, an American mechanical engineer and creator of «Taylorism», commonly known as **«Scientific Management»**, conducted extensive research to understand the interaction between humans and machines with the goal of increasing efficiency. In **1911**, Taylor published a monograph titled **«The Principles of Scientific Management»**, considered as the earliest example of user-centric design principles. Take a look at **table 1** for the comparison between these early management principles and the first known user-centric design principles made public by Don Norman.

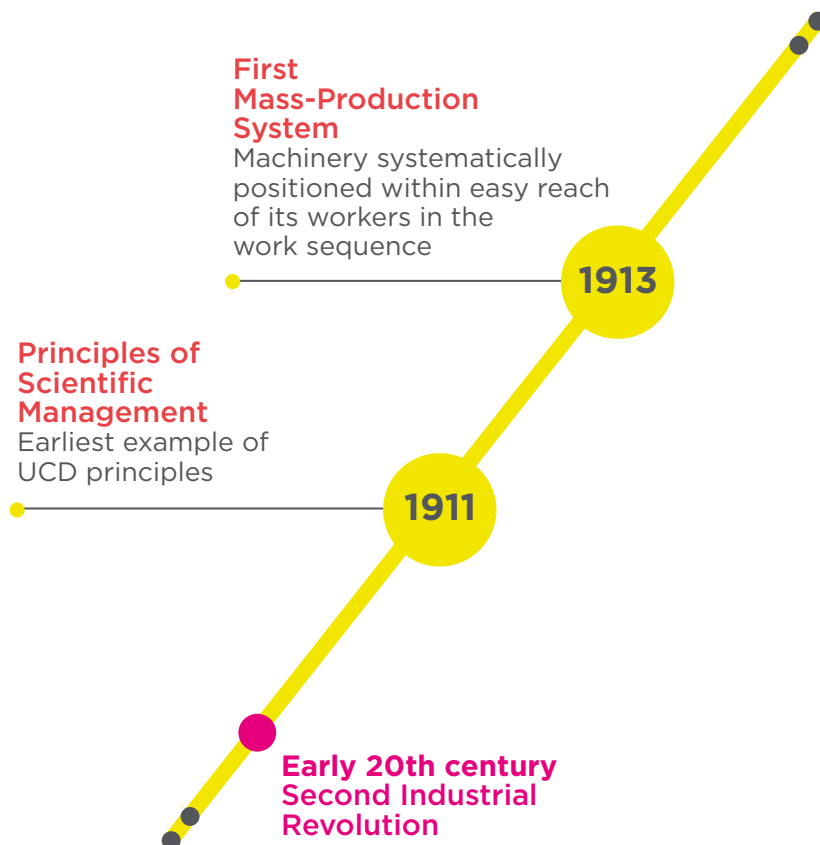


TABLE 1  
**Comparison between Scientific Management and Human-Centered Design principles**  
 The order of principles has been changed to better illustrate the comparison between the two sets.

**Principles of Scientific Management by Frederick Winslow Taylor (1911)**

**Principles of Human-Centered Design by Don Norman (2019)<sup>7</sup>**

1	Use the <b>scientific method</b> to study work and determine the most efficient way to perform specific tasks. Avoid making managerial decisions based on opinion, intuition, or rule of thumb.	Continually <b>test and refine</b> our proposals, ensuring they genuinely meet the needs of the people for whom they are intended.
2	Match <b>workers</b> to their job based on capability and motivation, and train them to work at maximum capacity. If the right workers are not at the right job, the organization’s efficiency will be reduced.	Focus on <b>people</b> .
3	Monitor worker performance and provide instructions and supervision to ensure that they’re using the most efficient ways of working. There should be <b>cooperation</b> between workers and management.	Take a systems point of view, realizing that most complications result from the <b>interdependencies</b> of the multiple parts.
4	Allocate the work between managers and workers so that the managers spend their time planning and training, allowing the workers to perform their tasks efficiently.	Ensure that the core, root issues are solved, not just the problem as presented (which is often the symptom, not the cause).

<sup>7</sup> <https://jnd.org/the-four-fundamental-principles-ofhuman-centered-design>



In **1913** Henry Ford, an American industrialist and founder of the Ford Motor Company introduced the **first mass-production system**. In order to scale the production of its cars, Ford Motors completely re-designed its factory with machinery systematically positioned within easy reach of its workers in the work sequence, forming the assembly line within the mass-production system.

**The savings from mass-production methods allowed car prices to decline from \$780 in 1910 to \$360 in 1916, effectively achieving sustainability and making cars affordable for the average worker for the first time in history.<sup>8</sup>**



In **1940**, Toyota, a Japanese multinational automotive manufacturer, introduced their famous **human-centered production system**. While Taylorism was focused on optimizing the work output, **«The Toyota Way»** placed the worker at the center of their system. See **table 2** for the comparison between the The Toyota Way principles and the modern user-centric design principles.

<sup>8</sup> Beaudreau, Bernard C. (1996). *Mass Production, the Stock Market Crash and the Great Depression*

One of the Toyota system’s principal elements was the **feedback mechanism** where non-management workers were empowered to stop production altogether by using a pullcord if they identified a quality or processing problem.

TABLE 2  
**Comparison between The Toyota Way and Human-Centered Design principles.**  
The order of principles has been changed to better illustrate the comparison between the two sets.

The 14 principles of «The Toyota Way» (2001)	Principles of Human-Centered Design by Don Norman (2019)
1 Continuously solving <b>root problems</b> drives organizational learning.	Ensuring that the core, <b>root issues</b> are solved, not just the problem as presented (which is often the symptom, not the cause).
2 Add value to the organization by developing your <b>people and partners</b> .	Focusing on <b>people</b> .
3 <b>Long-term</b> philosophy.	Taking a <b>systems point of view</b> , realizing that most complications result from the interdependencies of the multiple parts.
4 The <b>right process</b> will produce the right results.	Continually <b>testing and refining</b> our proposals, ensuring they truly meet the needs of the people for whom they are intended.

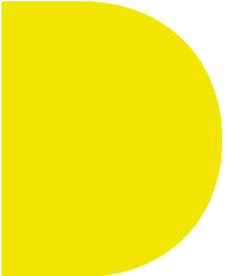
Production remained at a standstill until a solution was found. It was an early sign of what is now called **co-creation** in user experience where the users are empowered to take part in the building process of the solution, fostering ownership, and rapid iteration.

The Toyota principles originated from the management principles introduced by the American engineer William Edwards Deming in Japan after World War II to recover the Japanese economy. These principles, rooted in people as a means for continuous improvements, are often attributed as a driver for Japan to become the second-largest economy (the Japanese post-war economic miracle 1950–1960) after the United States.

**Some of the benefits presented by Edwards Deming in his famous lecture to Japanese management in 1950 include:**

-  **Better design of products to improve service.**
-  **A higher level of uniform product quality.**
-  **Improvement of product testing in the workplace and research centers.**
-  **Greater sales through side global markets.**

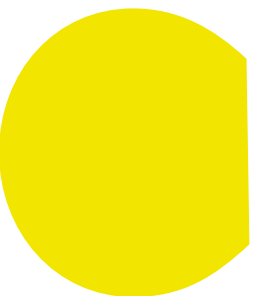
Moving forward to the **Digital Revolution** around **1980**, also known as the **Third Industrial Revolution**, this period marked the transition from mechanical and analog technology to computers. Specifically, the introduction of **the personal computer opened up a new era of economic opportunities** called the «Information Age».



**Before the personal computer, only information technology professionals were interacting with computers. When the personal computer became part of everyday life, for the first time the general population was using computers designed by and for engineers, often subject to arcane commands and system dialogs.**

Instead of machines in a production line, the tool being used to get the job done was now the computer; without constant supervision and adding a wide range of use cases for computers.

As the personal computer became part of the mainstream population, the field of **Human-Computer Interaction (HCI)** emerged in **1983** as an area of research to study the design and use of computer technology. Much as in the 20th century, when the machine era called for new management principles to understand how to use the shift in work patterns for economic advancements.



**HCI was created as a specialty under computer science, featuring cognitive science and human factors engineering.**

In **1998**, Ben Shneiderman, an American computer scientist and professor at the University of Maryland's Human-Computer Interaction Lab, published the famous **Eight Golden Rules** for HCI in his book «Designing the User Interface: Strategies for Effective Human-Computer Interaction»:<sup>9</sup>

<sup>9</sup> Shneiderman, Plaisant, Cohen, Jacobs, and Elmqvist (2016) *Designing the User Interface: Strategies for Effective Human-Computer Interaction*

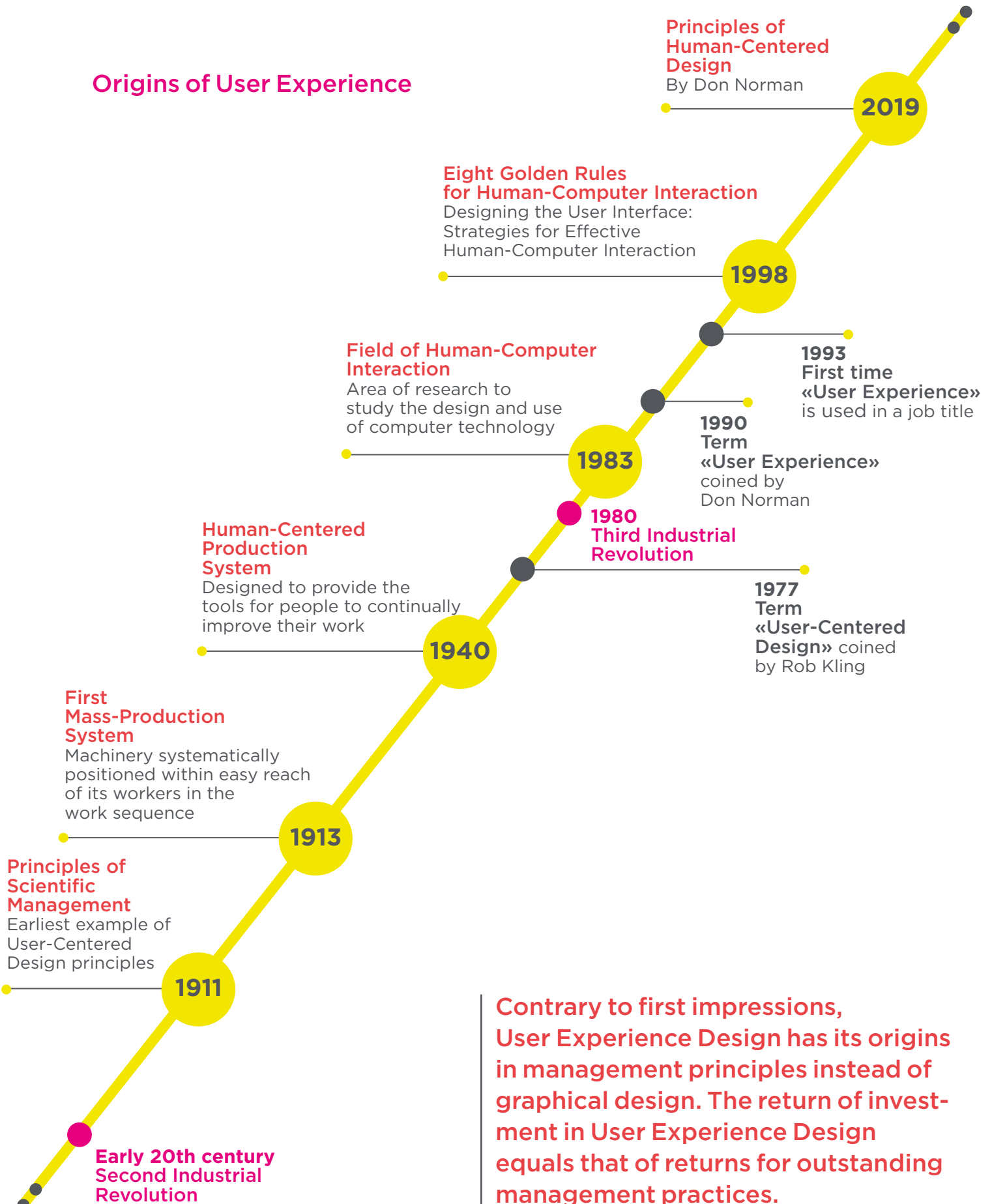
## Ben Shneiderman's Eight Golden Rules for HCI

- 1 Strive for consistency:** consistent sequences of actions should be required in similar situations.
- 2 Seek universal usability:** recognize the needs of diverse users and design for plasticity, facilitating the transformation of content.
- 3 Offer informative feedback:** for every user action, there should be interface feedback.
- 4 Design dialogs to yield closure:** sequences of actions should be organized into groups with a beginning, middle, and end.
- 5 Prevent errors:** as much as possible, design the interface so that users cannot make serious errors.
- 6 Permit easy reversal of actions:** as much as possible, actions should be reversible.
- 7 Keep users in control:** experienced users strongly desire the sense that they are in charge of the interface and that the interface responds to their actions.
- 8 Reduce short-term memory load:** Humans' limited capacity for information processing in short-term memory requires that designers avoid interfaces in which users must remember information from one display and then use that information on another display.

Shneiderman created these principles to increase user productivity by providing simplified data-entry procedures, comprehensible displays, and rapid informative feedback to increase feelings of competence, mastery, and control over the system.<sup>10</sup> However, these principles only addressed the graphical interface with computers, missing the context and the overall interaction with other actors and touchpoints for users to accomplish their goal.

<sup>10</sup> <https://www.cs.umd.edu/users/ben/goldenrules.html>

## Origins of User Experience



Contrary to first impressions, User Experience Design has its origins in management principles instead of graphical design. The return of investment in User Experience Design equals that of returns for outstanding management practices.

Don Norman, an American researcher, professor, and author, had been writing about User-Centered Design (UCD) since 1986 with his book «User-Centered System Design: New Perspectives on Human-computer Interaction». Originally coined by Rob Kling in 1977, UCD was adopted and popularized by Norman in his research laboratory at the University of California in San Diego. **Norman argued that systems should be designed based on the needs of the users, instead of just aesthetics.**

In 1993 Norman transitioned from academia to cognitive engineering by joining Apple Computer as an «Apple Fellow» and later as a «User Experience Architect». This was the first time User Experience had been used in a job title. When asked about why he changed his job title to include user experience, he explained:

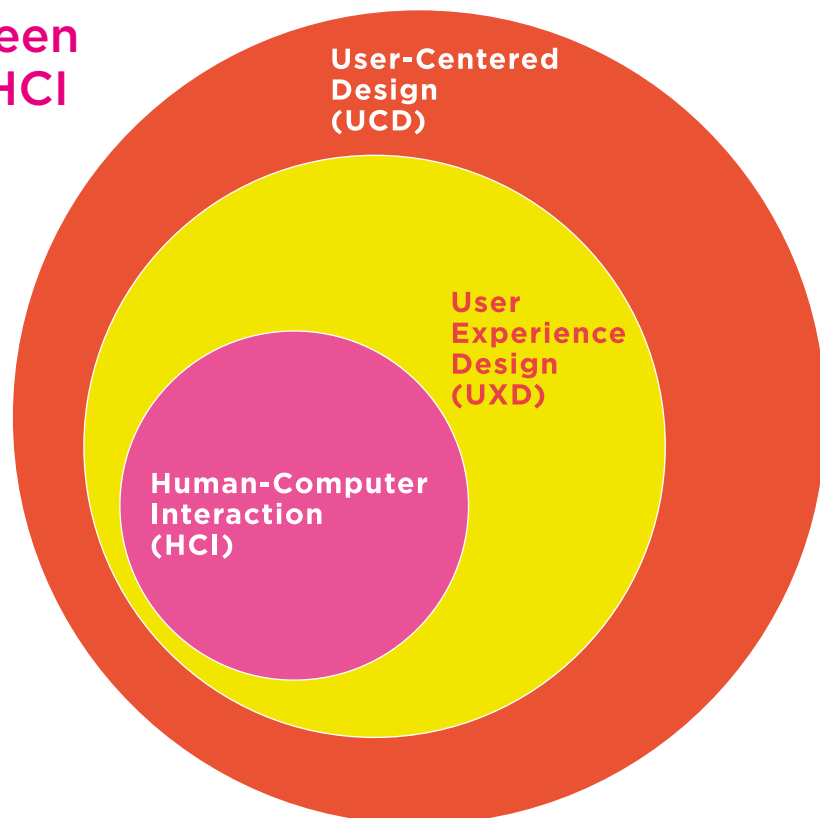
**«I invented the term because I thought human interface and usability were too narrow: I wanted to cover all aspects of the person's experience with a system, including industrial design, graphics, the interface, the physical interaction, and the manual».**<sup>11</sup> Don Norman

<sup>11</sup> <https://vimeo.com/2963837>



While User-Centered Design was considered to be a set of frameworks not restricted to interfaces or technologies, Human-Computer Interaction was created to focus only on the interface between computers and users. This was the fundamental gap that led to the invention of User Experience Design as it is known today. UXD takes the traditional Human-Computer Interaction principles and extends them to study all aspects of a product or service beyond the graphical interface.

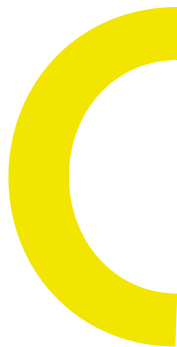
### Gap between UCD and HCI



Just as in the 20th-century management principles centered on workers were created to increase efficiency and improve the economy, today UXD is used to create products and services that meet the needs of its users, stakeholders, and employees.

Today, Don Norman is the director of the University of California's Design Lab (DLab) in San Diego. He leads the work on major societal issues, such as large-scale education, automation, healthcare, data, citizen science, and more.<sup>12</sup>

**In the following sections, the three core components, fundamental for a well-designed citizen experience, are presented. The components are:**



- 1 System Thinking**
- 2 Hierarchy of Needs**
- 3 The Scientific Method**

<sup>12</sup> <https://designlab.ucsd.edu/about/philosophy/>

## System Thinking

When individuals interact with any product or service, there is an experience taking place, whether it is through customer service, in-store browsing, online checkout, or a government transaction. Intentional or unintentional choices create experiences. More often than not, experiences left undesigned become points of frustration for its users and are actively avoided or not used at all given the option.

Such was the case for California's food stamp program, CalFresh. In 2013, **only 66% of eligible residents participated in the program**, in contrast with 87% or higher in other states. The low rate meant that California was **forgoing as much as \$3.88 billion from federal Government funding** for the state's food insecure population. Even more surprising, CalFresh had the **second-highest administrative cost per case per month in the country**.<sup>13</sup> Clearly, something was broken in the program experience.

Thinking in systems helps understand the user experience. A system can only be explained by the sum of its parts, analyzing how each component

interacts with each other and influences the behavior of the system holistically. This is called **«System Thinking»**, first conceptualized in the 1960s by Ludwig von Bertalanffy in his book «General System Theory» and Jay W Forrester when he developed the System Dynamics Theory at the Massachusetts Institute of Technology (MIT).<sup>14</sup> User Experience Design uses «System Thinking» to uncover and address the root problem and address it holistically.

After interviewing more than 100 CalFresh staff members at different levels, it was clear that the churn rate<sup>15</sup> was one of the biggest reasons California had the lowest Supplemental Nutrition Assistance Program (SNAP) participation in the United States.<sup>16</sup>

**«Recipients had an experience that led them to drop off and not come back»** said Jake Solomon, a Code for America Fellow working to improve the system as part of his one-year fellowship program at the United States government.

<sup>14</sup> <https://medium.com/systems-thinking-for-non-systems-thinkers/what-we-can-learn-from-the-history-of-systems-thinking-79852d8955c4>

<sup>15</sup> The rate at which people stop using the product or service in a given timeframe, usually monthly or annually

<sup>16</sup> Supplemental Nutrition Assistance Program (SNAP) provides nutrition benefits to supplement the food budget of needy families so they can purchase healthy food and move towards self-sufficiency.

The Code for America<sup>17</sup> team set out to understand the experience of applying to the CalFresh program as a system of components that interact with each other to influence citizen behavior.

What they found is that the official CalFresh online application system was connected to another three, often irrelevant, systems making it very difficult to complete a successful application.

**If the applicant was successful, an in-person interview with an eligibility worker would follow, both the online and in-person requirement taking a lot of time for the applicant and the interviewer to complete. Once approved, the applicant would get an Electronic Benefits Transfer (EBT) card to access the benefits.**

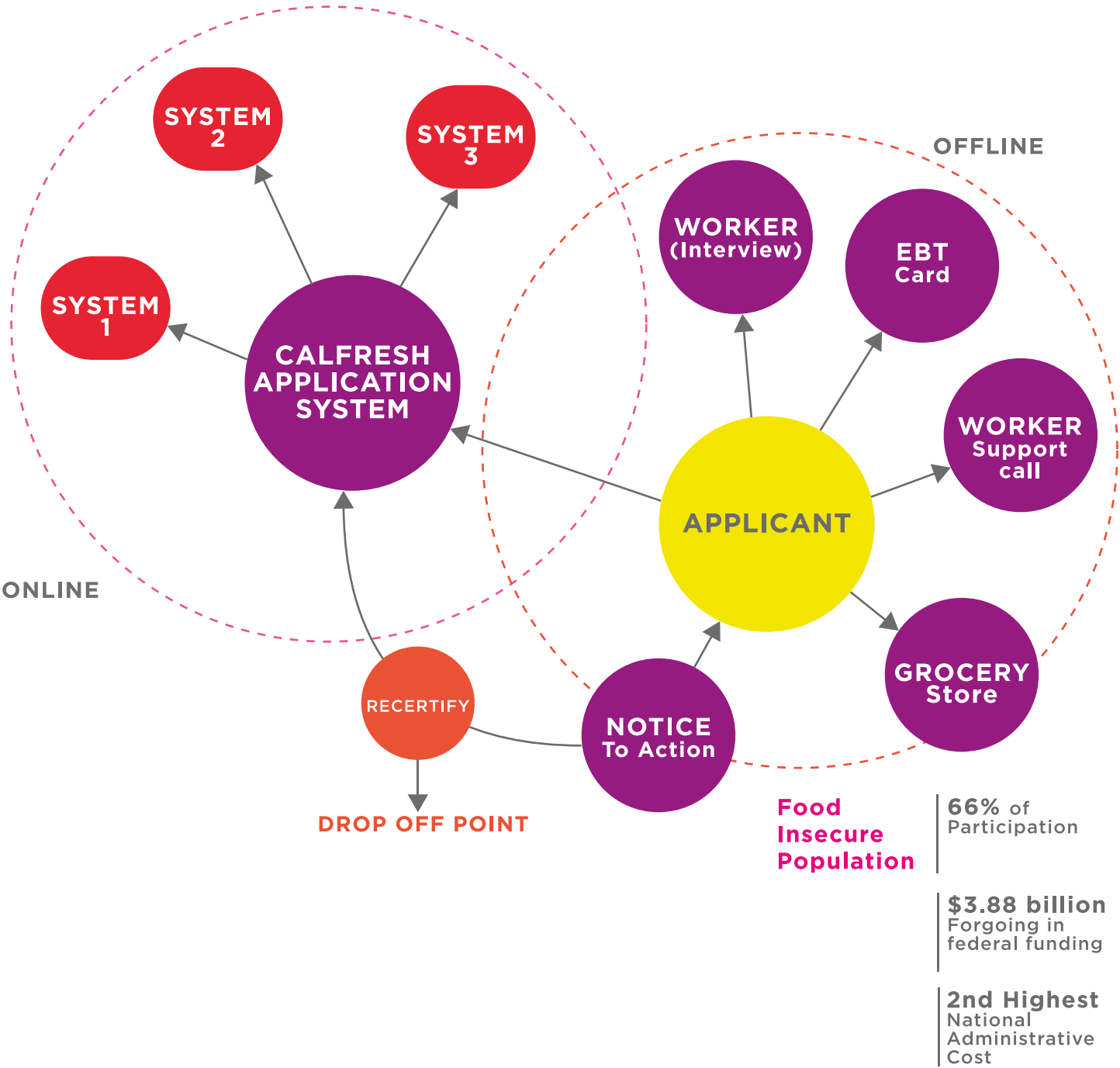
From then on, it was trial and error for the users to understand where the card was accepted. If the applicant needed an update on the card balance, the only way to find out would be to call an 800 number. After overcoming all of these friction points, the applicant needed to check-in or recertify to maintain the enrollment. Unfortunately, the «Notice of Action» letters were so confusing that applicants didn't know what action to take. The enrollment would end after one year, and the

<sup>17</sup> Code for America (CfA) was a San Francisco-based non-profit organization that partnered with city, county and state governments to redesign public services. <https://www.codeforamerica.org>



applicant would find out when the EBT card didn't work while purchasing groceries at the store. Once expired, the applicant would have to re-apply and start the application process all over again.

## CalFresh Experience Ecosystem\* in 2013



\*This is an oversimplified visualization of the ecosystem, for the purpose of this paper.

# «Why are you putting a burden on people who have the most friction in their lives? You should be removing friction».<sup>18</sup> Dave Guarino, Code for America Fellow

Only when the Code for America team was able to map the whole experience from the applicant's point of view, were they able to understand how improving one or many components would change the dynamic of the application process. Often the components of an experience are managed by different teams, creating a fragmented user experience that can only be diagnosed by visualizing the system as a whole.

In the words of Don Norman: «If you think of the product as a service, then the separate parts make no sense – the point of a product is to offer great experiences to its owner, which means that it offers a service. And that experience, that service, comprises the totality of its parts: The whole is indeed made up of all of the parts. The real value of a product consists of far more than the product's components.»<sup>19</sup>

<sup>18</sup> HKS (2016) Hacking Bureaucracy: reimagining california's food stamp program in the digital age  
<sup>19</sup> [https://jnd.org/systems\\_thinking\\_a\\_product\\_is\\_more\\_than\\_the\\_product/](https://jnd.org/systems_thinking_a_product_is_more_than_the_product/)

## Hierarchy of Needs

Well-designed User Experience (UX) is based on user needs. It is a common misconception that UX is how the product looks. Instead, UX is how the solution meets the needs of the user.

**«Most people make the mistake of thinking design is what it looks like. People think it's this veneer – that the designers are handed this box and told, «Make it look good!» That's not what we think design is. It's not just what it looks like and feels like. Design is how it works.»** Steve Jobs, Apple CEO <sup>20</sup>

### What does it mean to design for user needs?

In 2011, Aaron Walter, in his book «Designing for Emotion,» introduced an adaptation of Abraham Maslow's hierarchy of needs to illustrate the levels of needs to be met by a product or service. In Maslow's theory from 1943, he argues that individuals' most basic needs need to be met before they become motivated to achieve subsequent level needs.<sup>21</sup>

In Aaron's adaptation, a product or service must start by being functional and useful for the end-

<sup>20</sup> <https://www.nytimes.com/2003/11/30/magazine/the-guts-of-a-new-machine.html>

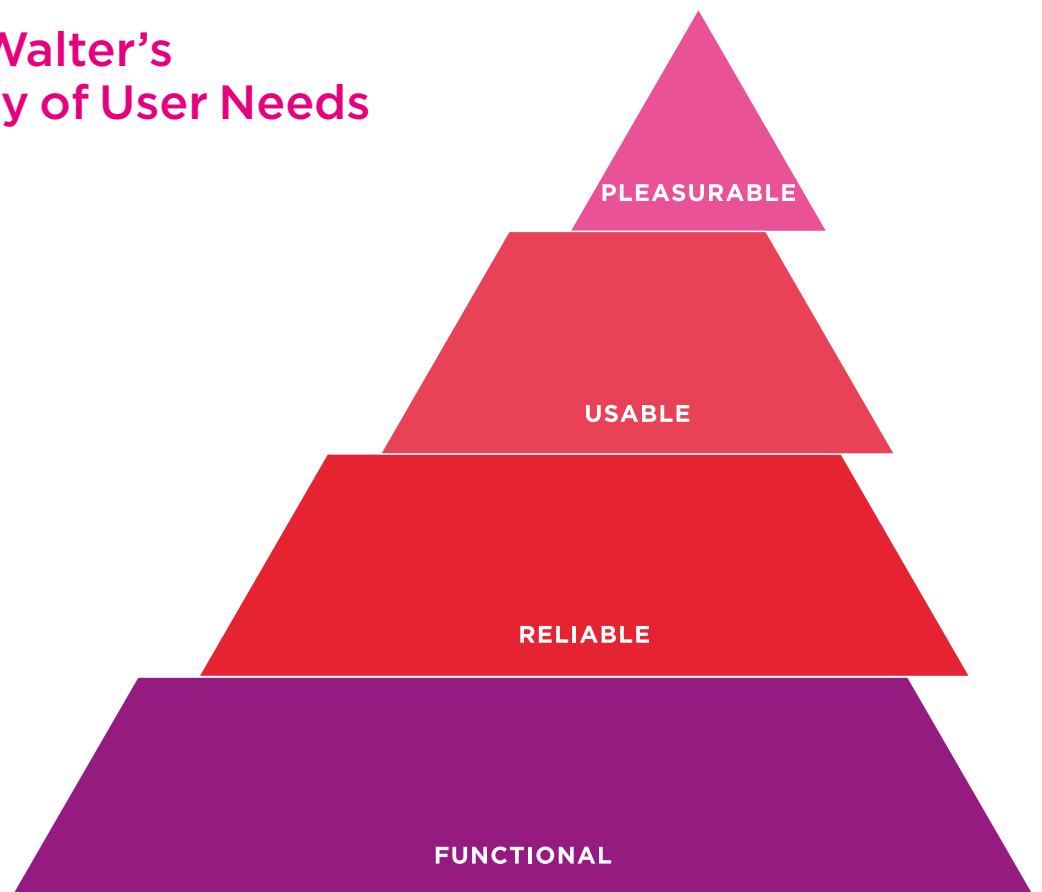
<sup>21</sup> Maslow (1943) *A theory of human motivation*



user. Only then it can start being thought of as reliable, useable, and pleasurable.

We can tie this argument back to Don Norman's user-centered design principles, and later User Experience Design. Before we start thinking about how the user interacts with an interface, we need to make sure that what we're building is something that the user needs. There is nothing more wasteful than an incredibly easy-to-use product that nobody needs.

## Aarron Walter's Hierarchy of User Needs



In the words of Peter F. Drucker, an American management consultant and one of the best-known and most widely influential thinkers and writers on the subject of management theory and practice:

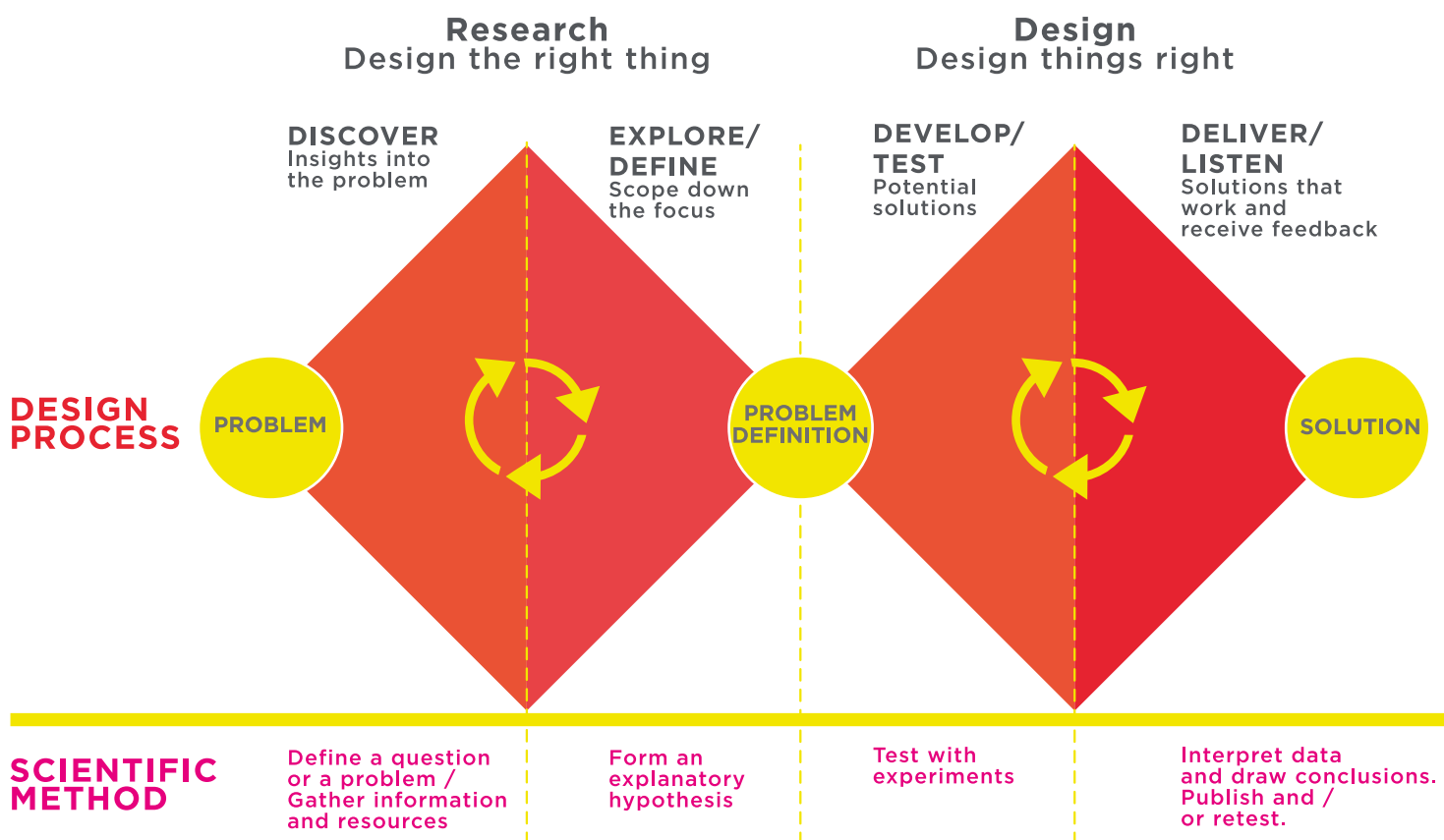
**«There is nothing so useless as doing efficiently that which should not be done at all.»<sup>22</sup> Peter F. Drucker**

## Scientific Method

Using design, we can create the perception of experiences that have not been fully developed yet. This allows a rhythm of experimentation to test assumptions early, mitigating risks, defining users' real needs and the ecosystem.

The Scientific Method is at the root of the design process. It is used to craft hypotheses and pursue empirical evidence that helps define the problem we are trying to solve and the effectiveness of the solution we have in mind. Take a look at the Scientific Method and the design process for a visual comparison in figure 2.

**FIGURE 2**  
**Comparison between the Scientific Method and the Design Process**  
The iterative process is performed in each phase of the design process until there is enough data to move to the next phase.



## The Scientific Method

**Define** a question or a problem.  
Gather information and resources  
(observe).

**Form** an explanatory hypotheses.

**Test** the hypothesis by performing  
an experiment and collecting data in  
a reproducible manner.

**Analyze** and interpret the data to  
draw conclusions that serve as a starting  
point for new hypotheses. Publish  
results and retest.

## The Design Process Double Diamond<sup>23</sup>

**Discover** the first diamond helps people  
understand, rather than simply assume  
what the problem is. It involves speaking  
to and spending time with people who  
are affected by the issues.

**Define** the insight gathered from the  
discovery phase can help you to define  
the challenge in a different way.

**Develop** the second diamond encoura-  
ges people to give different answers to the  
clearly defined problem, seeking inspira-  
tion from elsewhere and co-designing  
with a range of different people.

**Deliver** delivery involves testing out  
different solutions at small-scale, rejecting  
those that will not work, and improving  
the ones that will.

Both the Scientific Method and design process are  
iterative to learn fast and build upon evidence. In a  
digital project, the UX process is of specific interest  
regarding a return on investment.

According to Roger Pressman in his book «Software Engineering: A Practitioner's Approach»<sup>24</sup>:



**«For every dollar spent to resolve a problem during product design, \$10 would be spent on the same problem during development and \$100 or more if the problem had to be solved after the product's release.»** Roger Pressman

The design process explores the problem by creating and testing hypotheses, early and often, to define and solve the biggest problems first and mitigate risks.

The background is a solid red color. It is decorated with various geometric shapes in two colors: pink and orange. There are several semi-circles, some of which are cut off by the edges of the frame. There are also triangles, some pointing upwards and some downwards. A large, stylized 'X' shape is formed by two overlapping triangles in the upper center. In the lower center, there is a square-like shape formed by two overlapping rectangles. The overall composition is abstract and modern.

## Case studies: The shift from services to experiences centered on citizen needs

# Case Studies: the shift from services to experiences centered on citizen needs

Many of the lessons that can be drawn from successful implementation of user experience practices to design services for citizens can be traced back to two emblematic instances when governments decided to place the citizen in the center for their digital transformation efforts. The first case is the Government of the United Kingdom of Great Britain and Northern Ireland, and the second case is the Government of the United States.

## UNITED KINGDOM Government Digital Service: Call for Revolution



**Martha Lane Fox**, a British entrepreneur and philanthropist, went from the private sector into public service in 2009. Among many of her accomplishments, she led the creation of the **Government Digital Service (GDS)**, a team rooted in advancing digital inclusion for citizens using technology and design as critical differentiators from traditional government capabilities.

In 2010, Lane Fox was invited in her role as United Kingdom Digital Champion in the British Government to conduct an audit of the main Government website. At the time, this website was the main channel to deliver digital services to citizens.

As a result of the audit, she delivered a letter to the Minister for the Cabinet Office titled «Revolution, not evolution»<sup>25</sup> where she stated:

**«There has been a reinvention of the Internet and the behavior of users in the last few years. Digital services are now more agile, open, and cheaper. To take advantage of these changes, the government needs to move to a «service culture», putting the needs of citizens ahead of those of departments.»** Martha Lane Fox

<sup>25</sup> <https://www.gov.uk/government/publications/directgov-2010-and-beyond-revolution-not-evolution-a-report-by-martha-lane-fox>



Martha Lane Fox's recommendations related to citizen experience included:

- **The government's main website should focus on improving service quality for citizens and delivering significant cost savings from service simplification and a shift to digital-only services.**
- **We should put government transactional services and content where people spend their time, rather than always expecting them to go to the government website.**
- **A new central commissioning team should take responsibility for an overall consistent excellent user experience on the government web state.**
- **A new Chief Executive Officer for digital with absolute authority over the user experience across all online government services and the power to direct all government online spending. They should work within the infrastructure parameters set by the Chief Information Officer – but independent.**

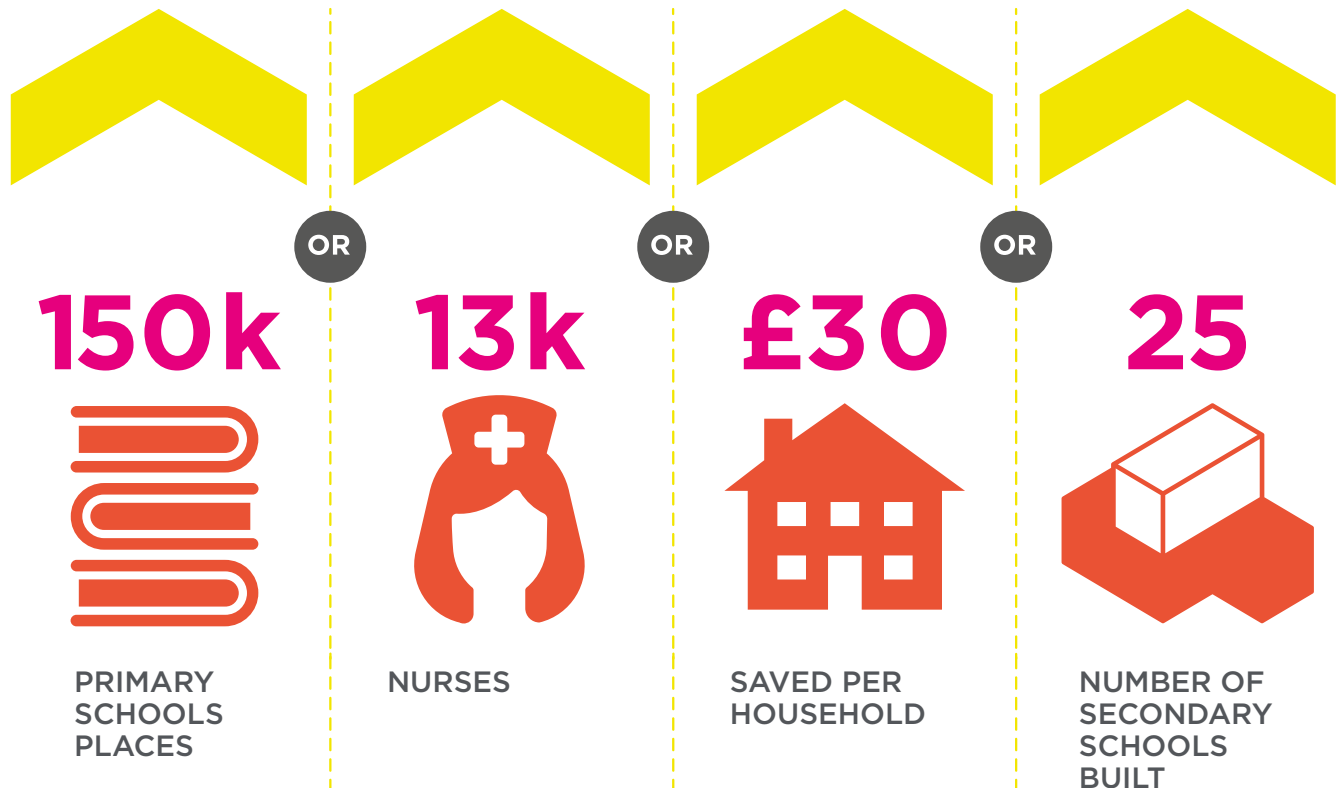
As a first step forward, the brand-new Government Digital Service (GDS) team produced a prototype of Lane Fox's vision in 12 weeks for £261,000:

**«A boundary-pushing experimental prototype (also known as a Minimum Viable Product) was delivered by an in-house team working in an open, agile way, placing user needs at the core of design process.»<sup>26</sup> Tom Loosemore**

<sup>26</sup> <https://gds.blog.gov.uk/2011/07/29/alpha-gov-uk-wrap-up>

According to the Efficiency and Reform Group, by 2013 the GDS efforts to redesign digital services had been directly responsible for saving departments over £500 million.<sup>27</sup>

## How could you invest the £500 million in savings?



«What's helped us achieve that? In large part it's because at GDS we focus on user needs. Relentlessly. This might sound at odds with a drive towards efficiency, but we have found it to be the best way to reduce cost.» - Mike Bracken and Liam Maxwell, Gov.uk

Today, the **UK government's design principles** have evolved to reflect the three components of the citizen's user experience.<sup>28</sup>

<sup>27</sup> <https://gds.blog.gov.uk/2013/06/10/better-for-less>

<sup>28</sup> <https://www.gov.uk/guidance/government-design-principles>

TABLE 3

The UK Digital Principles classified by the three fundamental components proposed in this paper.

## System Thinking

**Understand context:** we're not designing for a screen; we're designing for people. We need to think hard about the context in which they're using our services.

**Build digital services, not websites:** the digital world has to connect to the real world, so we have to think about all aspects of a service, and make sure they add up to something that meets user needs.

## Hierarchy of Needs

**Start with user needs:** if you don't know what the user needs are, you won't build the right thing.

**Do the hard work to make it simple:** making something simple to use is much harder – especially when the underlying systems are complex – but that's what we should be doing.

**This is for everyone:** accessible design is good design. We're designing for the whole country, not just the ones who are used to using the web. The people who most need our services are often the people who find them hardest to use.

**Be consistent, not uniform:** we should use the same language and the same design patterns wherever possible. But that shouldn't stop us from improving or changing them in the future when we find better ways of doing things or the needs of users change.

## The Scientific Method

**Do less:** if we've found a way of doing something that works, we should make it reusable and shareable instead of reinventing the wheel every time.

**Design with data:** in most cases, we can learn from real world behavior by looking at how existing services are used.

**Iterate. Then iterate again:** the best way to build good services is to start small and iterate wildly. Iteration reduces risk. It makes big failures unlikely and turns small failures into lessons.

**Make things open, it makes things better:** we should share what we're doing whenever we can. With colleagues, with users, with the world. Share code, share designs, share ideas, share intentions, share failures. The more eyes there are on a service the better it gets – howlers are spotted, better alternatives are pointed out, the bar is raised.

Around the same time that the UK government released the first report quantifying the impact of the GDS team, there was a crisis looming in the United States that would lead to their own implementation of a digital team in the highest office of government.

## UNITED STATES Digital Service: The Affordable Care Act

On October 1, 2013, the United States government launched its new healthcare marketplace. One of the goals of the marketplace was to increase access to health care for all Americans. The marketplace would be the official health care exchange that would allow residents to compare prices of health care plans, identify if they qualify for federal subsidies, and enroll in a plan of their choosing.

On launch day, 250,000 users visited the website in the first two hours. By the end of the first day, only six users had been able to complete and submit their application for a health insurance plan.<sup>29</sup>



**«We're going to do a challenge, I'm going to try to download every movie ever made, and you're going to try to sign up for Obamacare, and we'll see what happens first,» Jon Stewart<sup>30</sup> said to big laughs from his Comedy Central audience right after the launch of the marketplace.**

<sup>29</sup> <https://digital.hbs.edu/platform-rctom/submission/the-failed-launch-of-www-healthcare-gov>

<sup>30</sup> American comedian, writer, producer, director, political commentator, actor, and television host.

President Barack Obama had to address the nation:

**«There's no sugar-coating: the market place has been too slow, people have been getting stuck during the application process, and I think it's fair to say that nobody's more frustrated by that than I am.»** Barack Obama

What followed was the origin of what today is the **United States Digital Service (USDS)**, a group of the best engineering, design, and government talent performing a term-limited «tour of civic service» to help change the government approach to technology. The small but empowered teams within the USDS use their expertise to develop human-centered solutions to the federal Government's most pressing technical challenges.

**Jennifer Pahlka**, founder and executive director of Code for America (a non-partisan, non-political nonprofit working to improve government services for all), was invited to serve as Deputy Chief Technology Officer in the White House Office of Science and Technology Policy.



She started running the second round of a fellowship program that brought technologists and designers from the private sector to address the health-care marketplace crisis. While this was a better approach to government technology, Pahlka aimed to establish a formal team similar to what the United Kingdom Government had accomplished. She led the creation and launch of the United States Digital Service team in August of 2014.

After the USDS early intervention, 5.3 million Americans were able to enroll in a health insurance plan via the online marketplace in the first enrollment period. By further implementing solutions based on human needs, understanding the ecosystem of opportunities and constraints, and testing early and often,

**the Federal Government was able to increase enrollment success to 9.8 million via their online marketplace by 2016, out of 12.7 million enrolments in total.** <sup>31</sup>



Today, the USDS team is an elite technology unit within the Executive Office of the President of the United States.

<sup>31</sup> <https://www.usds.gov/report-to-congress/2016/healthcare-dot-gov>

The background is a solid dark red color. It is decorated with various abstract geometric shapes in two colors: light pink and orange. These shapes include circles, semi-circles, triangles, rectangles, and curved segments, some of which are partially cut off by the edges of the frame. The shapes are scattered across the page, creating a modern, minimalist aesthetic.

# Principles for Digital Development: start with the user

# Principles for Digital Development: start with the user

In 2018, the Inter-American Development Bank (IDB) endorsed the «Principles for Digital Development». This endorsement means that the IDB, at the highest levels, agrees to put these principles into practice through its policies, processes, and activities. It is a formal and public acknowledgment that the organization is committed to designing technology-enabled tools that can reach more people, achieve greater impact, and produce stronger and more sustainable outcomes.<sup>32</sup>

The Principles for Digital Development are designed to help integrate best practices into technology-enabled programs. They include guidance for every phase of the project life cycle, and they are part of an ongoing effort among development practitioners to share knowledge and support continuous learning. The principles were first created in consultation with organizations such as the Bill and Melinda Gates Foundation, the Swedish International Development Agency (SIDA), the United Nations Children's Fund (UNICEF), the United Nations Development Program (UNDP),

<sup>32</sup> <https://digitalprinciples.org/about>



**TABLE 3**  
**Two of the core Principles for Digital Development** that relate to User Experience Design.  
 Source:  
[Digitalprinciples.org/principles](https://digitalprinciples.org/principles)

the World Bank, the United States Agency for International Development (USAID), and the World Health Organization (WHO). From the nine principles, «Design with the user» and «Understanding the existing ecosystem» provide a guide for implementing User Experience Design in technology projects from international organizations:

	Design with the user	Understand the existing ecosystem
DESCRIPTION	Successful digital initiatives are rooted in an understanding of user characteristics, needs, and challenges. It starts with getting to know the people you are designing for through conversation, observation, and co-creation. Information gathered through this engagement leads to building, testing, and re-designing tools until they effectively meet user needs. By designing with the users, and not for them, you can build digital tools to better address the specific context, culture, behaviors, and expectations of the people who will directly interact with the technology. Designing together means partnering with users throughout the project lifecycle, co-creating solutions, and continuously gathering and incorporating users’ feedback.	Well-designed initiatives and digital tools consider the particular structures and needs that exist in each country, region, and community. Dedicating time and resources to analyze the ecosystem, or context where you work, helps to ensure that selected technology tools will be relevant and sustainable and will not duplicate existing efforts. Ecosystems are defined by the culture, gender norms, political environment, economy, technology infrastructure, and other factors that can affect an individual’s ability to access and use a technology or to participate in an initiative. Initiatives that do not account for ecosystem challenges are less likely to achieve their objectives or scale. This may also lead to unintended consequences. The ecosystem is fluid, multifaceted, and ever-changing, requiring that digital development practitioners regularly analyze the context to check their assumptions.

## Design with the user



### CORE TENETS

- Incorporate multiple user types and stakeholders in each phase of the project lifecycle to direct feature needs and revise the design. Here, users are people who will interact directly with the tool or system, and stakeholders are people who will be affected by or have an interest in the tool or system, such as people whose data are being collected, government officials or researchers who may study the data collected.
- Design tools that improve users' current processes, saving time, using fewer resources, and improving quality.
- Develop context-appropriate tools informed by users' priorities and needs, considering the ecosystem and accepting that digital tools will not always be the best fit.
- Develop the tool in an incremental and iterative manner, with clear objectives and purpose in mind.
- Ensure that the design is sensitive to and considers the needs of the traditionally underserved.
- Embrace an iterative process that allows for incorporating feedback and adapting your tool after the initial testing and launch.
- Be open about setting expectations, and let people opt-out of participating in the design process.

## Understand the existing ecosystem

- Engage with your target users and consult existing research to develop an understanding of the people, networks, cultures, politics, infrastructure, and markets that make up your ecosystem before designing your initiative or tool.
- Coordinate with other implementing organizations, civil society, and the government early on to learn from successful and unsuccessful initiatives in the ecosystem, to avoid duplicating efforts, and to integrate with existing technical systems more easily.
- Ensure that your initiative aligns with existing technological, legal, and regulatory policies and that you consider policies that are currently in development.
- Involve community members, donors, local and national governments, and other implementing organizations throughout the project lifecycle.
- Monitor the ecosystem for changes throughout the project lifecycle, and adapt your products, tools, or initiative as needed.

For up-to-date tactical advice on the application and monitoring of these principles, please visit <https://www.digitalprinciples.org>. You'll find **recommendations for the project lifecycle of a digital solution in the development sector**, including:

-  **Analyze and Plan** (identify user needs and understand the ecosystem).
-  **Design and Develop** (co-create the solution with users testing needs and context).
-  **Deploy and Implement** (rapid user feedback and continuous improvement).
-  **Cross-cutting Monitoring and Evaluation** (monitor for changes and adapt).

The background is a solid dark red color. It is decorated with various geometric shapes in two colors: light pink and orange. In the top left, there is a large pink semi-circle. To its right, at the top center, is a large pink 'X' shape. In the top right corner, there is a pink semi-circle. On the left side, there is a large pink 'C' shape. In the center, there is a pink triangle pointing upwards. To the right of the center, there is a pink vertical rectangle. In the bottom left, there is a pink semi-circle. In the bottom center, there is an orange square. To the right of the square, there is an orange semi-circle. In the bottom right corner, there is a large orange 'L' shape. There are also several orange shapes: a semi-circle in the bottom left, a triangle pointing right in the bottom center, a triangle pointing left in the bottom center, and a vertical rectangle in the bottom right. The text 'How to Start' is written in white, bold, sans-serif font, centered horizontally and slightly above the vertical center.

## How to Start

# How to Start

There are many aspects to take into consideration in order to foster a culture of «people-first technology» in the public sector. These include changes in procurement policies, change management, vendor management overhaul, governance structure, and more. However, many of these actions can be suggested for the most significant changes in large organizations. In this chapter, the focus will be on actionable advice to identify how to apply the three components of UXD presented in this publication.

The following set of recommended UX methods are meant to help identify the ecosystem where and when the problem happens, whose needs are being addressed, and how assumptions can be tested to generate evidence.

## System thinking (where & when)

- User journey map
- Service design blueprint
- Field studies

## Hierarchy of needs (who)

- Persona development
- Diary studies
- Experience-based roadmap

## Scientific method (what)

- Participatory design (co-creation)
- Concept testing
- Experience prototype

An ideal implementation of these components would yield an evidence-based problem statement and an effective solution co-created with those who need it most, showing evidence of the adoption and voluntarily recurrent use.

A good evidence-based understanding of a problem based on user needs would generate a short statement to explain:<sup>33</sup>

- 1 What is the problem we are trying to solve?**
- 2 Who has this problem?**
- 3 Where does this problem occur?**
- 4 When is this problem occurring?**
- 5 Why is this a problem worth solving?**

The quality of the user experience could be measured by:

#### **Adoption (new users)**



**Adoption rate:** percentage of new users. Number of new users / total users.



**Time to first key action:** the time it takes new users to perform the first key action in the solution. This refers to the perceived value the solution has for the user.



**Conversion rate:** percentage of users that perform a key action for the business for the first time.

33 [https://www.sheffield.ac.uk/polopoly\\_fs/1.440722!/file/HowtoWriteaProblemStatement.pdf](https://www.sheffield.ac.uk/polopoly_fs/1.440722!/file/HowtoWriteaProblemStatement.pdf)

## Engagement (existing users)



**Percentage of active users:** the percentage of users that use key parts of the solution in a given timeframe, usually 1, 7, or 30 days.



**The number of key actions performed by users:** the average number a user is performing a key action of the solution.



**The time between key actions:** the time that passes between key actions. The goal here could be to reduce or increase this metric.

## Retention (returning users)



**Churn rate:** the rate at which people stop using the product or service in a given timeframe, usually monthly or annually.



**Net promoter score:** a scale to measure the user willingness to recommend a product or service to others, as a proxy to gauge the user's overall satisfaction with the experience.

Using a combination of a well-defined problem and relevant metrics to measure the value provided to users can start creating the optimal citizen experience with government services. The recommendations here are not exhausted, but a good start for high-level implementation of UXD.

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Conclusions



# Conclusions

The rise of the experience economy is bringing the citizen to the center of government. Services are being replaced by experiences where the needs of the citizen are met at the right time and in context. In the transformation of services using technology, policymakers must meet the new expectations of digital citizens while also taking into account non-digital citizens in order to provide inclusive services for all.

Moving beyond frameworks like Design Thinking, the governments of the United Kingdom and the United States have shifted their digital transformation strategy to include UXD at the highest level. **User Experience Design**, stemming from the business management world, specializes in understanding and designing the optimal citizen experience. The case studies of the UK and the US demonstrate a measurable a return of investment of implementing UXD.

In this paper, **System Thinking, Hierarchy of Needs**, and the **Scientific Method** were proposed as the fundamental components to creating a well-designed experience that provides an evidence-based understanding of the context of citizens and needs.

Using fundamentals and principles, this publication aimed to facilitate a **starting point** for other policy-makers to reference and create their own.

As we move closer to a culture of human-centered technology, we must start with people. Empower teams to design the experience and the tools to work based on the three components proposed here. Take stock of the current digital transformation strategy. **Start measuring and improving the citizen experience.**

Make sure digital services are **designed with and for the people.**



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# Citizen Experience Design for Digital Transformation



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