

Envisioning

Digital Interactivity
in the Time of Covid-19



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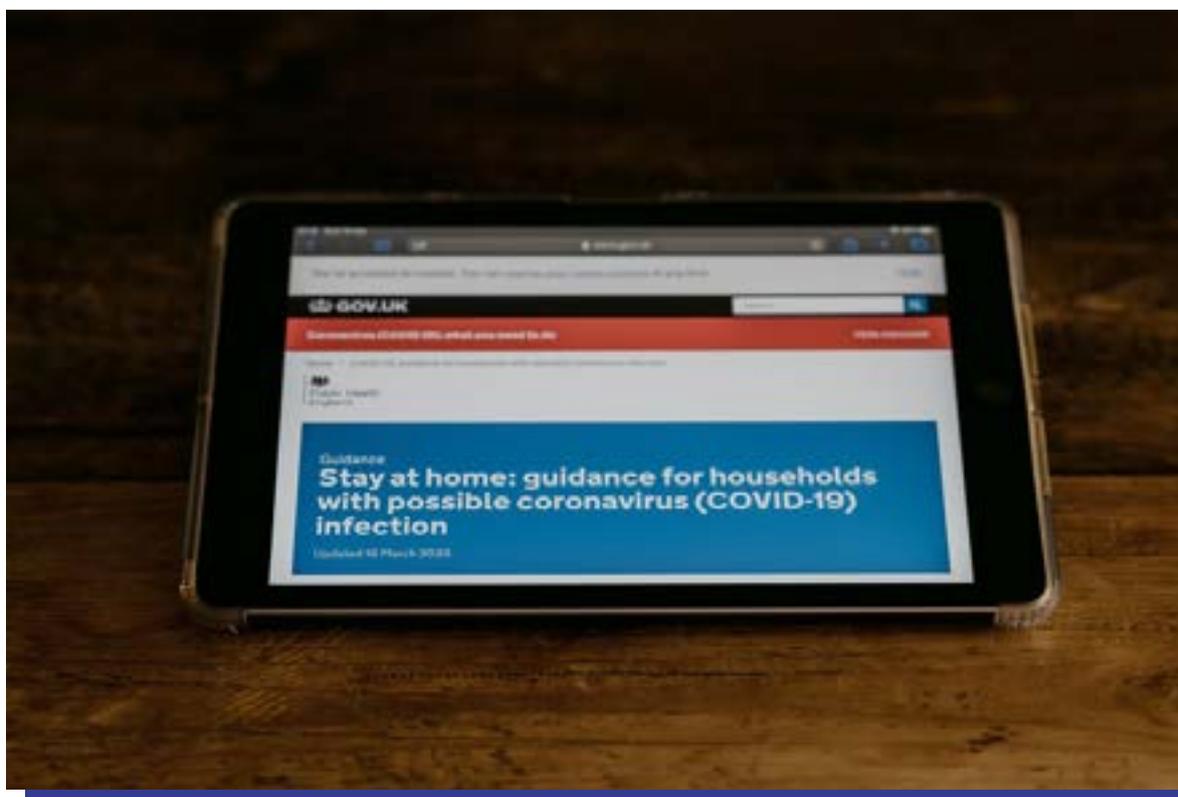
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Over a year into the COVID-19 pandemic, the novel virus cut both ways for the world of business. While some industries thrived through the health concerns and the new lifestyle, those whose operation relies on physical contact and gathering of people in a shared environment experienced a considerable fall, which meant unrepairable damage for some of them.

Unfortunately, the interactive signage and kiosk industry shared the misfortune. Lock-downs, closures, and altered attitudes towards public touchscreen put a halt to the increasing need for those devices, consequently impacting solution provider's business.

Although the recent introduction of long-awaited vaccines seems to shed a positive light on the dark era, we will never again feel the same way about public touchscreens for as long as we are not entirely free from COVID-19 and all infectious disease.



Undoubtedly, the unprecedented turn of events didn't help us respond in the best fast way we would have hoped. But the bright side of it all is that the pandemic also sparked off the driving forces for reshaping digital interactivity as we know it, guiding us towards groundbreaking opportunities for digital signage and kiosks evolution.

Just like the way digital signage and kiosk have transformed throughout history while reflecting each era in which we live, the pandemic's impact on our lifestyle, accompanied by today's technological capabilities, has opened the door for the next chapter of digital interactivity.

But as reflected in the pandemic's damaging impact, adopting an effective change towards positive evolution in such unexampled time can be a significant challenge. But we can increase the chance of overcoming that challenge first by laying the foundation of the effort: visualizing what we want to achieve with real-world examples, then identifying the right forces for and against realizing the goal. Without such groundwork, we won't build with confidence actionable plans towards making tangible changes.



Following chapters of this ebook on that account will serve as the lighthouse guiding those initial steps of achieving digital interactivity that succeeds in the time of COVID-19 and beyond. To facilitate the inspiring work, we will borrow the idea of force field analysis, a strategic change management framework proposed by social psychologist Kurt Lewin.

The Goal and Forces of Change

Some would assume that once a failure happens for an apparent reason, they can overturn the situation by merely attempting the opposite or withdrawing the cause. But it is often not as simple. We often struggle to make challenging decisions while setting up goals and identifying the right “reality-reflecting” drivers for making tangible changes towards achieving the goals, particularly in today’s context for those searching for a survival plan in the time of COVID-19.

Created by Kurt Lewin for his work as a social psychologist, Force Field Analysis strategy has been widely used to help problems as such. The idea is that all situations with a goal maintain an equilibrium between the driving forces for (helping factors) and the resistant forces (hindering factors) against reaching the goal. Ideally, by increasing the favorable forces and reducing the opposites, the status quo can reach closer to the goal.

In this chapter, we will apply this framework to establish the foundation of our effort towards achieving succeeding digital interactivity in the time of COVID-19.

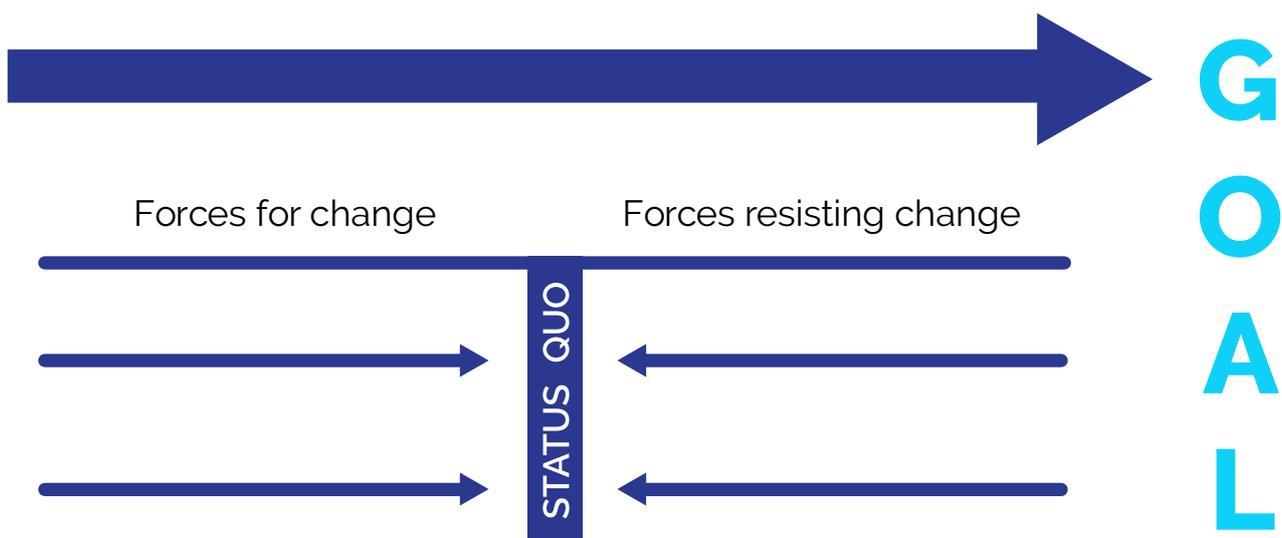


Figure 1. Force Field Analysis by Kurt Lewin

The Goal and Forces of Change

↳ The Goal

The goal is to realize a world where digital signage and kiosks will be integral to the fabric of our lives and not a nice-to-have accessory. They will become the wheels the world runs on throughout recurring global health crises, as they exist to function and enhance the way we live and do business despite social distancing. This set of goals may sound familiar, and for that we can thank the industry players and media who've been spreading optimism because, as experts say, optimism predicts success. With that in mind, let's spell out how digital interactivity could blend into our lives despite present and possibly future health risks.

- **Digital entrance traffic management solutions equipped with sensors, camera, analytics and display screens adopted at lobbies and entrances of countless shared places including offices, airports, malls, toilets, and schools.**

- **Interactive mask usage screening solutions with an interactive content display seen as often as welcome signs.**

- **Self-service kiosks proliferate, enhanced with non-touch alternative usage methods such as voice activation, touch simulation, and personal device-driven interaction.**

Audience aware signage solutions used as the primary tool to communicate safety guidelines as a complement to advertisements.

- **Kiosks facilitate patient check-ins at healthcare facilities to increase service efficiency and better manage people flow in spaces with higher health risks.**

Also, public spaces, workplaces, and businesses will evolve to adopt the above changes collectively and collaboratively because efforts against the spread of extremely infectious disease depend on collaboration and share commitment.

The Goal and Forces of Change

▾ Forces of Change

Now that we have visualized what the world in harmony with digital interactivity would look like, let's identify the drivers that urge us to realize this vision, and other forces that keep us away from achieving it.

FORCES FOR CHANGE

- **Technological advancement**

Countless technologies, including sensors, deep learning [computer vision](#), audience analytics, touch simulation, and mobile device integration, are now more mature and attainable than ever before. Such development hints at a natural evolution of digital interactivity while creating a perfect environment to realize ideal digital interactivity in the time of COVID.

- **Public attitude**

The recent pandemic has dramatically altered public-facing digital installation's public perception that a change to address their new expectations and concerns has become inevitable.

- **Safer alternative**

Not only the altered public attitude urges new forms of digital interactivity, but digital signage and kiosk are also safer alternatives as they moderate the risk of human-to-human disease transmission when used with proper sanitation measures such as the use of disinfectant solutions, distancing, and touchless [interactive options](#).



The Goal and Forces of Change

↳ Forces of Change

- **Familiarity with digital interactivity**

Digital signage and kiosk solutions have long penetrated our daily lives and have solidified their role as the most accurate and controllable communicator alternative to direct human-to-human interaction. Global society has already adjusted its lifestyle to the extent that it's nearly impossible to live without digital interactivity in public spaces.

- **Effectiveness of digital vs. human-to-human interaction**

Effectiveness is at the core of everything we do, including the customer and visitor experience. Digital interactivity has proven to be far more effective, accurate, and efficient than human to human interaction, which is what we need in this health sensitive era.



The Goal and Forces of Change

↳ Forces of Change

FORCES AGAINST CHANGE

Forces for change	STATUS QUO	Forces resisting change
<ul style="list-style-type: none"> • Technological advancement 	STATUS QUO	<ul style="list-style-type: none"> • Technological limits Humanity is only as good as its tools. One factor that could hinder the adoption of advanced technology is lack of awareness, not lack of availability. Today, some of the most advanced digital interactivity methods are not as widespread as others and that could wrongly define the extent of technological capacity.
<ul style="list-style-type: none"> • Public Attitude 		<ul style="list-style-type: none"> • Public Attitude Ironically, while negative public attitudes toward touch-based solutions can act as a positive force of change, the skepticism can hinder proactive end-user efforts towards the entire concept and eventually undermine receptivity to digital interactivity.
<ul style="list-style-type: none"> • Safer alternative 		<ul style="list-style-type: none"> • Insensitivity towards the effect of a collective measure In an ideal world, businesses and public places would be held accountable to embrace digital interactivity as a safe alternative to face-to-face interaction. In reality, unfortunately, there is insensitivity towards that responsibility, undermining collective efforts against disease transmission.
<ul style="list-style-type: none"> • Familiarity with digital interactivity 		<ul style="list-style-type: none"> • Unfamiliarity with new solutions Although diverse technological options are up for grabs, traditional/passive digital signage with limited interactivity has long been a widely used and expected practice. From the solution providers and end-users' point of view, there could be a sense of anxiety and risk in investing in new concepts. From visitor's and customers' perspectives, there could be a lack of awareness and familiarity with new digital interactivity methods.
<ul style="list-style-type: none"> • Effectiveness of digital vs Human to human interaction 		<ul style="list-style-type: none"> • The need for human contact We can't blame our innate quality as social animals. There are clearly different efficiencies in human interaction vs human to machine interaction regardless of the superiority in terms of its accuracy, complexity, and safety. For example, instead of adopting a people counting mask detection solution interactively displaying safety warnings, one might prefer to position a person to do that job.

Now that we have spelled out the vision and identified the different driving forces around the status quo, the remaining tasks are clear: to actively react to the forces for change, which in return will weaken the resistant factors on the other side, bringing us closer to the next chapter of digital interactivity.

Applications and Examples

There are already practical examples of digital interactivity ideally adapted for the pandemic era. Even though it's fair to say some of those cases are not a popular practice and not fully representative of the global trend, it is worth reviewing others experiences as they imply that the things we envision today are not mere ideas but a reality.

Note: All following examples are created with and run in [Intuiface](#), except the last example: Example 3. 360 - Chicago Observation Deck interactive experience by Freetouch.



Applications and Examples

↳ Gesture Control / Touch Emulation

Using cameras to capture hand movement in front of a display, this approach is used to enable interaction with onscreen content without physical contact between hands and a screen.

Example 1. Touchless interactivity for multiple vertical uses by [Click Grafix](#)



Using motion sensors, Click Grafix turned a non-touchscreen into a gesture-controlled solution. This example also incorporates a temperature sensor, making it adaptable for multiple vertical scenarios requiring a health check before entry or use.

Example 2. Touchless touch self-service kiosk by Gestoos



Gestoos is an AI platform that enables cameras and sensors to see, understand, and respond to human movement and behavior in any environment or context.

Applications and Examples

↘ Computer Vision 1/3

Computer vision-enhanced interactive solutions can anonymously identify age range, gender, emotion, dwell time, and more of the person or people in front of a screen. With this integration, we can create and deploy content based on particular demographics. This implies the ability to collect reach data for analytics, determining content effectiveness and relevance by varying degrees of context.

Example 1. Face mask detection by Intuiface and Sightcorp

(Click [here](#) to download a sample experience)



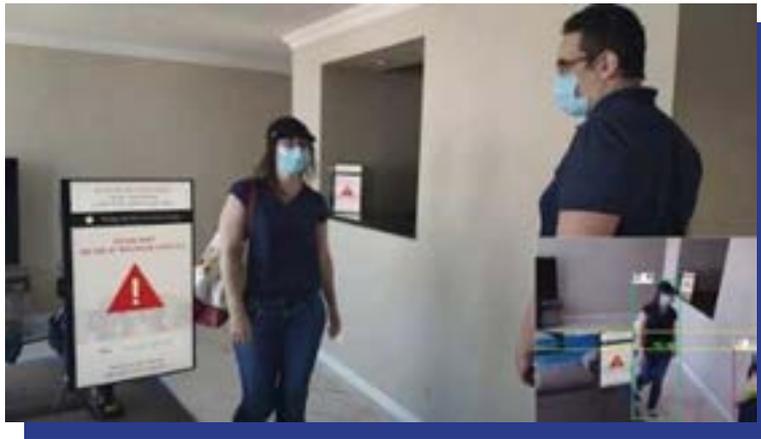
Retailers, banks, hospitals, airports - all have a mask policy and would benefit from automated displays showing Stop/Go messaging based on the detected presence of face coverings. Highly accurate computer vision software such as [Sightcorp DeepSight](#) Toolkit can see masks with a high accuracy level for both crowds and individuals.

Applications and Examples

Computer Vision 2/3

Example 2. Entrance Flow Management

(Click [here](#) to download a sample experience)



Another useful application for the COVID era. Using computer vision, keep track of the entry and exit counts for a venue. By comparing the latest count to venue capacity, enter/wait guidance can be displayed at the entrance. During idle time, advertisements or store information can be shown.

Example 3. On-screen content manipulation with head movement (Intuiface Face Detection with OpenVINO™)

(Click [here](#) to download a sample experience)

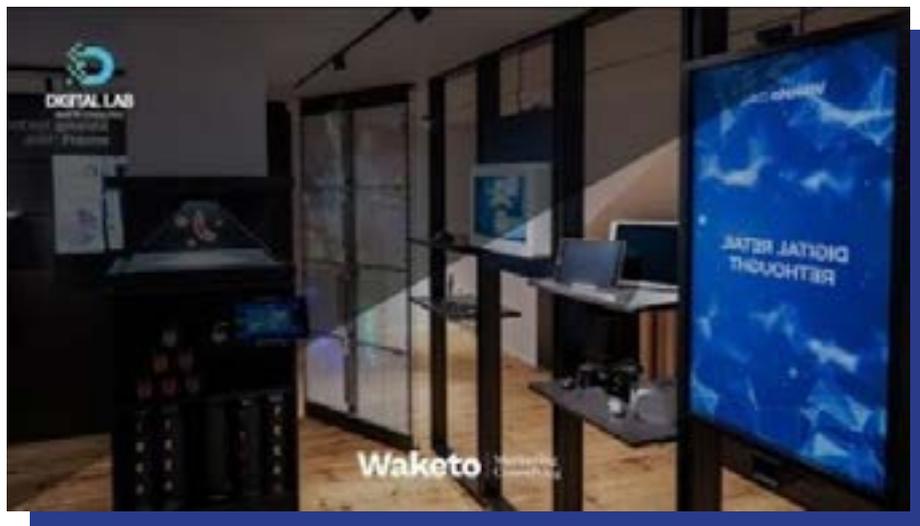


Applications and Examples

↳ Computer Vision 3/3

Computer vision is an exciting alternative to touch interaction amidst the concerns about touchscreen cleanliness. Head tracking could be used to indicate a preference. This article explains how to use the Intel distribution of the OpenVINO™ Toolkit, a free Computer Vision solution integrated with IntuiFace

Example 4. Demographic specific content display by Waketo



This in-store interactive experience anonymously tracks audience faces and deploy demographic specific content.

Applications and Examples

▾ Voice Activation 1/2

From Alexa and Siri for tablets to native platform services on Windows, and offerings by a host of third-party plug-and-play API alternatives – there is no shortage of mechanisms that can capture verbal commands and convert them into action. It's a genuinely hands-free approach that is also quite useful for handling accessibility requirements.

Example 1. Speech synthesis-enabled housing maintenance booking kiosk by BLIWE



Digital illiteracy concerns 17% of the population in France and more than 26% of people aged 60-74 ([source](#)). Intuiface Creative Expert partner, Bliwe launched this solution that mixes touch and voice in order to address the issue and to facilitate people with digital disabilities and to improve the life quality of tenants at social housings. Nonetheless, this is a great example of voice activation technology in real use, which also can address concerns regarding physical contact on public installations.

Applications and Examples

▾ Voice Activation 2/2

Example 2. Digital experience control using Siri by Paolo Tosolini



Apple's Siri leads the U.S. market for voice assistants on mobile phones with 45.65 percent followed by Google Assistant ([source](#)). This example shows how users can control digital signage content using the most accessible voice commanding tool from their personal device.

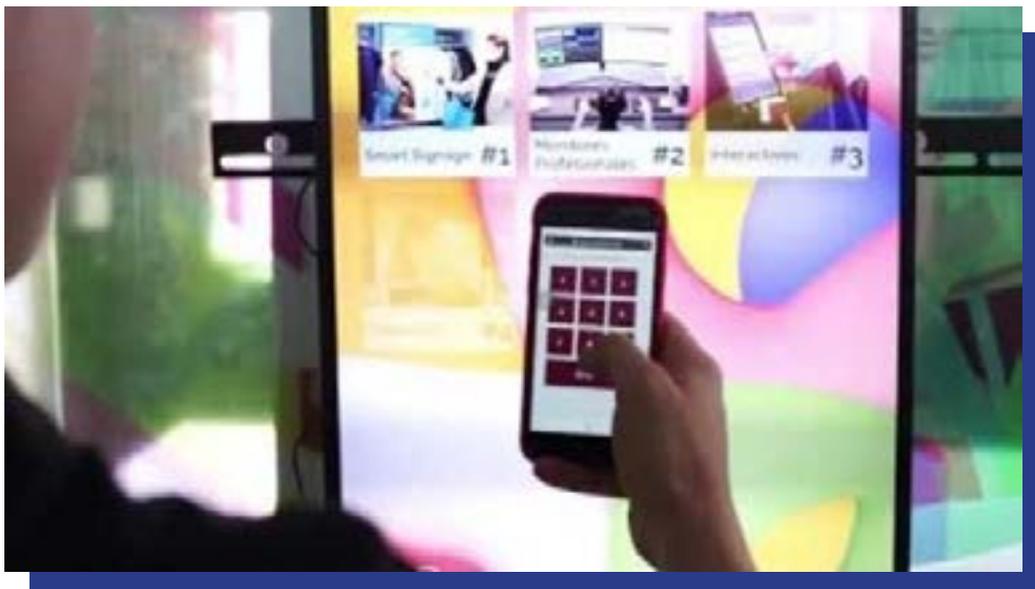
Applications and Examples

▸ Personal Device Information 1/2

A crucial approach to consider is enabling the audience to use their mobile phone to interact with the digital content. Deployments remain interactive, but in a no-touch way that may not only comfort the users but encourage their use by lowering health-sensitive caution.

Lurking around the edge but never grabbing headlines, QR codes are going to make a comeback explicitly because they are the ideal glue connecting a mobile phone or tablet to digital content in physical places.

Example 1. Mobile device-controlled digital catalog by Pixel Window



With this experience, customers at retail stores can control the kiosk and the content using their our mobile phone just by simply scanning the QR code. A proximity sensor is also installed, welcoming new users each time a movement is detected.

Applications and Examples

▾ Personal Device Information 1/2

Example 2. QR code real estate shop window by Intuiface



Passers-by can use their mobile phone to remotely control a list of available properties visible in a real estate shop window. To learn more, and download a sample experience, [click here](#).

Example 3. 360 Chicago Observation Deck interactive experience by Freetouch



This experience turns mobile phones into a virtual trackpad. Users can use interaction methods like click, drag, scroll and gestures from the safety of personal device. It's also secure and anonymous.