

DuPont’s Urbanization and Sustainability Experience

DuPont and Tipping Point Media

Best Use of Games or Simulations for Learning

January 2023



Company Background



Company-at-a-Glance	
Headquarters	974 Centre Rd, Wilmington, DE 19805
Year Founded	1897
Revenue	\$20.397 billion
Employees	34,000
Global Scale (Regions that you operate in or provide services to)	North America, Asia, Australia, Africa, Europe, South America
Customers/Output, etc. (Key customers and services offered)	Industrial chemicals, synthetic fibers, petroleum-based fuels and lubricants, pharmaceuticals, building materials, sterile and specialty packaging materials, cosmetics ingredients, and agricultural chemicals
Industry	Electronics, Industrial, Mobility, Materials, Water, and Protection
Stock Symbol	DD
Website	www.dupont.com

Company Background



Company-at-a-Glance	
Headquarters	255 Great Valley Pkwy STE 140, Malvern, PA 19355
Year Founded	2003
Revenue	\$3.4
Employees	40
Global Scale (Regions that you operate in or provide services to)	Global
Customers/Output, etc. (Key customers and services offered)	AbbVie – eLearning, Virtual Reality, Augmented Reality Medtronic – eLearning, Simulations Boston Scientific – eLearning J&J – eLearning, Virtual Reality, Augmented Reality Merz- Simulations
Industry	Education/Learning
Website	tipmedia.com

Budget and Timeframe

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Overall budget	\$350,000.00
Number of (HR, Learning, Talent) employees involved with the implementation?	4
Number of Operations or Subject Matter Expert employees involved with the implementation?	2
Number of contractors involved with implementation	1
Timeframe to implement	1 year
Start date of the program	01/01/2022

Business Conditions and Business Needs

The development process began at the core of DuPont. Like many companies of today, DuPont wanted to take a stand and show themselves to be a company that was aware of global crises, like rising urbanization and changing climates, and was willing to take steps to correct these problems and improve life on Earth for everyone. Specifically, they wanted to draw awareness to the issue of unsustainable living. The planet has a finite amount of people and resources, and if these are not properly managed and used in a sustainable fashion, we will run out before we learn to live without, which will cause irreversible damage to the modern way of life.

To draw awareness to the issues of urbanization and sustainability, DuPont contracted Tipping Point Media (TPM) to create an interactive city simulation. This set piece would allow people to see the effects of unsustainable living first-hand – not by hearing detached statistics and doomsaying, but by seeing the direct impacts these global shifts had on the lives of ordinary people living day-to-day lives in a standard American city.

The product is a city simulation that is accessible in WebGL (web browser) or augmented reality (AR) form, which means it can be viewed from almost any phone, tablet, or computer with access to the Internet. The original intention of the product was to create a set piece of augmented reality targets that would live in the DuPont innovation center. However, development of the project coincided with the coronavirus pandemic of 2020. Rather than abandon the project, though, DuPont tackled the issue head-on, redirecting efforts to creating the WebGL/AR versions available today. With these new platforms,

now DuPont visitors can access the project virtually from anywhere at any time, broadening its reach beyond physical attendees to the innovation center in Delaware.

Overview

DuPont's goal in developing this experience was to inspire participants to drive change in their respective fields and view DuPont as a collaboration and co-innovation partner for the future. By presenting this simulated 'city in chaos', DuPont strove to start conversations with experts in their fields and cause them to start looking at their industries with sustainability in mind going forward.

To achieve this, TPM designed and developed a simulated city set in the year 2030. Across the city, several 'hot spots' (clickable, interactive areas) denote areas where the city infrastructure is failing or about to fail. These 'hot spots' show how urbanization and unsustainable living can deteriorate over time, as well as the effects these can have on citizens living in these unsustainable conditions.

The experience features three scenarios, each one focused on a different aspect of infrastructure and development and how planning and innovation will affect these areas going forward – water treatment, housing and preparing for natural disasters, and 5G connectivity. In addition, the experience teaches users about urbanization, including what it is, six different trends to follow, and how participants can plan with increased urbanization in mind. The experience also highlights several of the United Nations' Sustainable Development Goals, creating another point of discussion between DuPont representatives and participants of the experience.

Design of the Program

The goal of creating the simulated city was to find real-world crises that are happening today and project them outwards to a logical yet still concerning conclusion. DuPont and TPM researchers worked together to find current issues with urbanization and unsustainable living and then built outwards to create the 'city in chaos', showing worst-case scenarios for citizens of the city if these issues continue to go ignored and unaddressed for the next decade of time.

For example, one of the sections of the experience focuses on climate change and the increasing trend of extreme weather. Many cities are not built for the 'once in a hundred years' storms, droughts, heat waves, and blizzards that have been occurring with more and more frequency as time passes and climate change goes unaddressed. In the simulation, the city is struck by a massive thunderstorm that pours rain for several days. Because the city is not built with green, absorbent infrastructures designed to deal with excessive rain, storm drains are overrun, and the streets are flooded. This, in turn, causes mass displacement of citizens as low-lying residential buildings not built with stormproof materials are flooded, damaged beyond repair, and condemned. Those who can stay in their homes experience increased health issues as the wet weather, paired with untreated building materials in their homes, causes an outbreak of mold and mold-related respiratory issues.

The simulation takes many steps to focus on the real-world effects on the average citizen. Large statistics and complicated science jargon are detached and difficult to understand. Seeing the events unfold through the eyes of the citizens, people forced to live through these events and suffer the consequences of unsustainability, immediately adds a layer of immersion and relatability. The simulation takes heavy advantage of 'digital storytelling', as the plights of the citizens unfold through breaking news segments, podcast interviews, emergency push alerts, group text messages, trending hashtags on Twitter, and more. Rather than hear businesspeople discuss in distant terms how they plan on repricing their services to counteract rising costs of labor and materials, audiences instead meet a group of mothers trying to pool money to keep their bills paid and continue caring for their children. Putting names and voices to these stories reminds participants that sustainability is not just theory crafting and postulating for a future that doesn't exist – it is a real problem, with real consequences, that affect real people in our real world.

Delivery of the Program

The first iteration of the experience to be released to the public was the WebGL (web browser) version. This version is accessible via a web link to anyone with an Internet connection from most computers using most standard web browsers. The WebGL version is fully narrated and equipped with on-screen instructions, so it can be navigated as a solo experience. However, this is not the intended delivery. In creating the WebGL version, DuPont hoped to recreate the feeling of the innovation center tour that was originally planned prior to the coronavirus pandemic, but in a safe and virtual space.

The intended delivery for this experience is a guided walkthrough where DuPont representatives meet with prospective innovation partners in a virtual meeting space (such as through Zoom or Microsoft Teams), then use screen-sharing capabilities to walk through the experience together. As the participant goes through the simulation, the DuPont representative will be on-hand to not only troubleshoot but also ask thought-provoking questions and provide information on how DuPont materials can help fuel innovation and sustainable changes in the participant's field of expertise.

Later, the project assets were reused to create an augmented reality version of the WebGL experience. The AR version is accessible by downloading the Urbanization and Sustainability Experience app onto an AR-compatible iPad from DuPont's company app store. Unlike older AR applications, which require a target image to function (usually in the form of a poster), this experience can project the simulated city onto any flat surface, like a floor, desk, or table. Like the WebGL version, the AR version of the experience is fully narrated with on-screen instructions, including how to set up the augmented reality, which means it can be explored independently as a solo experience. However, still similarly to the WebGL version, this is not the intended delivery. The portability of the iPad means DuPont representatives can take the simulation wherever they go, allowing them to use it as a tool for in-person meetings, whether that's out in the field or in the physical innovation center location as originally intended.

Measurable Benefits

Innovation rarely translates directly to profits. In this instance, return on investment is determined on DuPont's ability to build long-term partnerships with other companies and striving for a more sustainable future. This experience, accessible to people around the globe thanks to its WebGL/AR delivery platforms, is designed to spread information, build empathy and concern, and ultimately inspire audiences to make changes in their respective industries that will result in a brighter future for everyone on the planet. It speaks to the audience in simple terms using clear, easy-to-understand interface elements and personal, relatable storytelling. It conveys key pieces of information, not through statistics and walls of text, but through visualizations and a clear view of “here is where we are now” and “here is where we could be in as little as five to ten years”. Sustainable development cannot occur through the efforts of one person, or even one company, alone. It will require a global effort, across all industries, working together to preserve the planet and the resources on it we need to survive.

Between the WebGL page on DuPont's website and the AR app available in their app store (and in their innovation center), the Urbanization and Sustainability Experience is a major step forward in DuPont's efforts to rebrand as a socially and ecologically conscious corporation and build new, long-lasting partnerships that will improve the lives of everyone for many years to come.

Overall

Between the Urbanization and Sustainability Experience and several other virtual storytelling projects developed in the last few years, DuPont has learned that simple, relatable communication is key. If problems are presented as too big, too distant, too detached, then people will not act. Presenting the raw number of houses that are condemned due to irreparable flood damage does not inspire change the same way that hearing a heartbroken woman talk about losing her home through no fault of her own does. Creating empathy and putting real faces, names, and voices to larger problems makes them relatable – makes them feel ‘real’, like something that is Happening versus something that MIGHT happen.

Both DuPont and TPM are seeking out their next big storytelling experience for audiences to learn from. There are an infinite number of subjects and scenarios where participants could radically change the world with innovation and investment into a brighter future with sustainability at the forefront. The problems of tomorrow are solved with investments made today; by the time problems arrive, it is often too late to correct without drastic measures. Through this experience, and others like it, DuPont hopes to inspire audiences to make those investments now so that no one is forced to experience the ‘if only’ when—and it is a ‘when’—unsustainability runs its course and those who did not adapt must pay the price.

About Brandon Hall Group

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