



XENTITY

Segmented Identity in Digital World

Final Thesis Book • By Seong-Jik KIM • 04293435

Final Review Presentation • 05/04/2018 • 2nd Submission

Web Design & New Media • Academy of Art University

About Me

Autobiography

I am **a dreamer** who is **passionate about immersive storytelling**. Especially, I have enthusiasm for virtual reality and augmented reality technology, because **I strongly believe that VR / AR technology will definitely revolutionize media industry and our everyday life**.

Before coming to San Francisco as **a selected employee for study abroad program of Korean Broadcasting System**, I had worked as a VR/AR News Director. I worked with professional 3D modelers and animators, and **I was so interested in making invisible thought visible**, but I had only engineering base. In addition, we had created only pre-sequenced animation without interaction, but I also would like to know **how interactive storytelling and user interface could be made by sophisticated visual look and Internet technology**. These are the reason why I decided to study well-organized academic design program

in Web Design and New Media department, Academy of Art University. **Definitely, I have successfully been transformed from a broadcast engineer to a new media designer**.

So luckily, I have awesome chances to learn emerging tech, connect AR/VR industry professionals and learn skills and indescribable lessons during my study in San Francisco, Most of all, I was selected by Oculus Launchpad program in May 2016, so I could make friendship with a hundred VR/AR enthusiasts in the United States, Some of them have landed in immersive industry with their specialties. Additionally, I had a chance to join an AR startup in San Mateo, so I could have luck with my design to be presented and demonstrated at CES 2018, Las Vegas.

I undeniably believe that lessons from my graduate study and above experiences help my dream to come true.



Resume

Seong-Jik (Jack) KIM

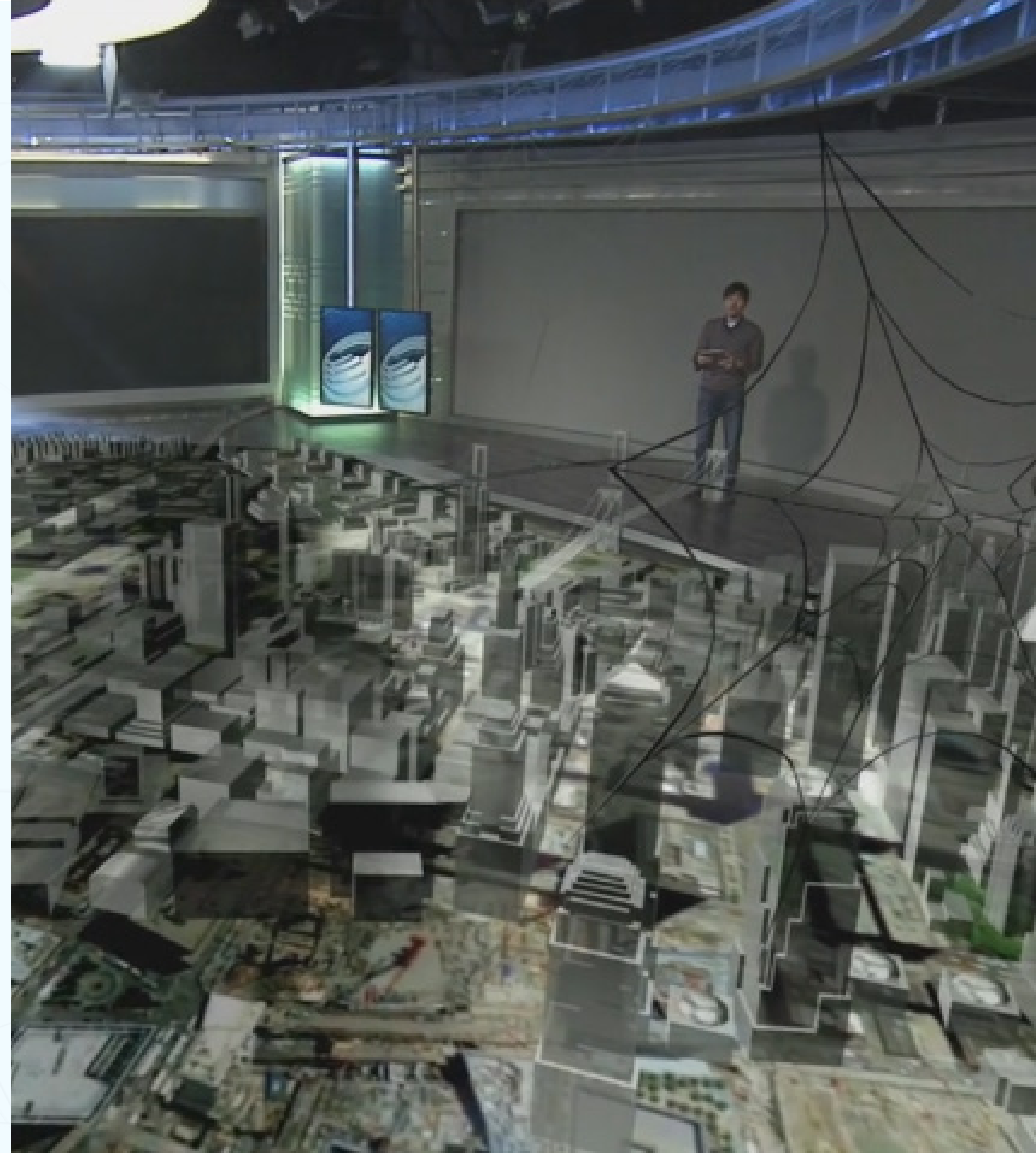
- **Principal UX/UI Designer, VR/AR Designer** @ Korean Broadcasting System
(May.2017~Present)
- **Tech Intern** @ Unity Technologies Korea (Feb.2017~May.2017)
- **UX/UI Designer (Augmented Reality)** @ DreamWorld USA, Inc. (Oct.2016~Jan.2017)
- **Oculus Launch Pad Program Fellow Member** | VR Developer (May~Oct.2016)
- **VLearn** (Voice Controlled Educational VR Project) | Unity Design
 - AT&T VR Hackathon SF Final Three nominated (Nov.4~6, 2016)
- **VR/AR News Director** @ Korean Broadcasting System (Mar.2009~Aug.2014)
- **Academy of Art Univ, MFA, Web Design and New Media**
 - San Francisco, CA | 09/2014 ~ Present
- **Hongik Univ, BA, Electrical and Control Engineering**
 - Seoul, Korea | 03/1992 ~ 02/1999

<http://www.jikkim.com>

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<https://www.linkedin.com/in/jikkim55>

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XENTITY

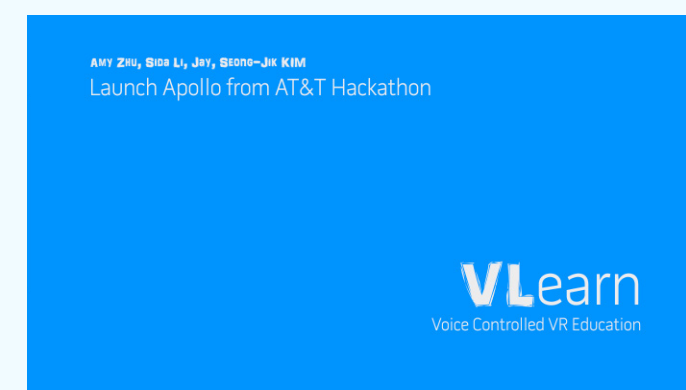
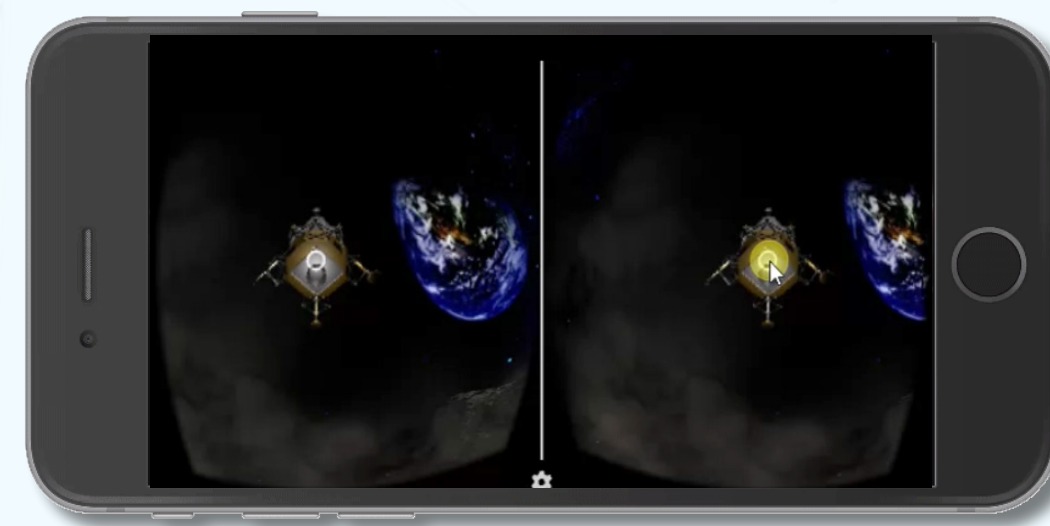
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Portfolio

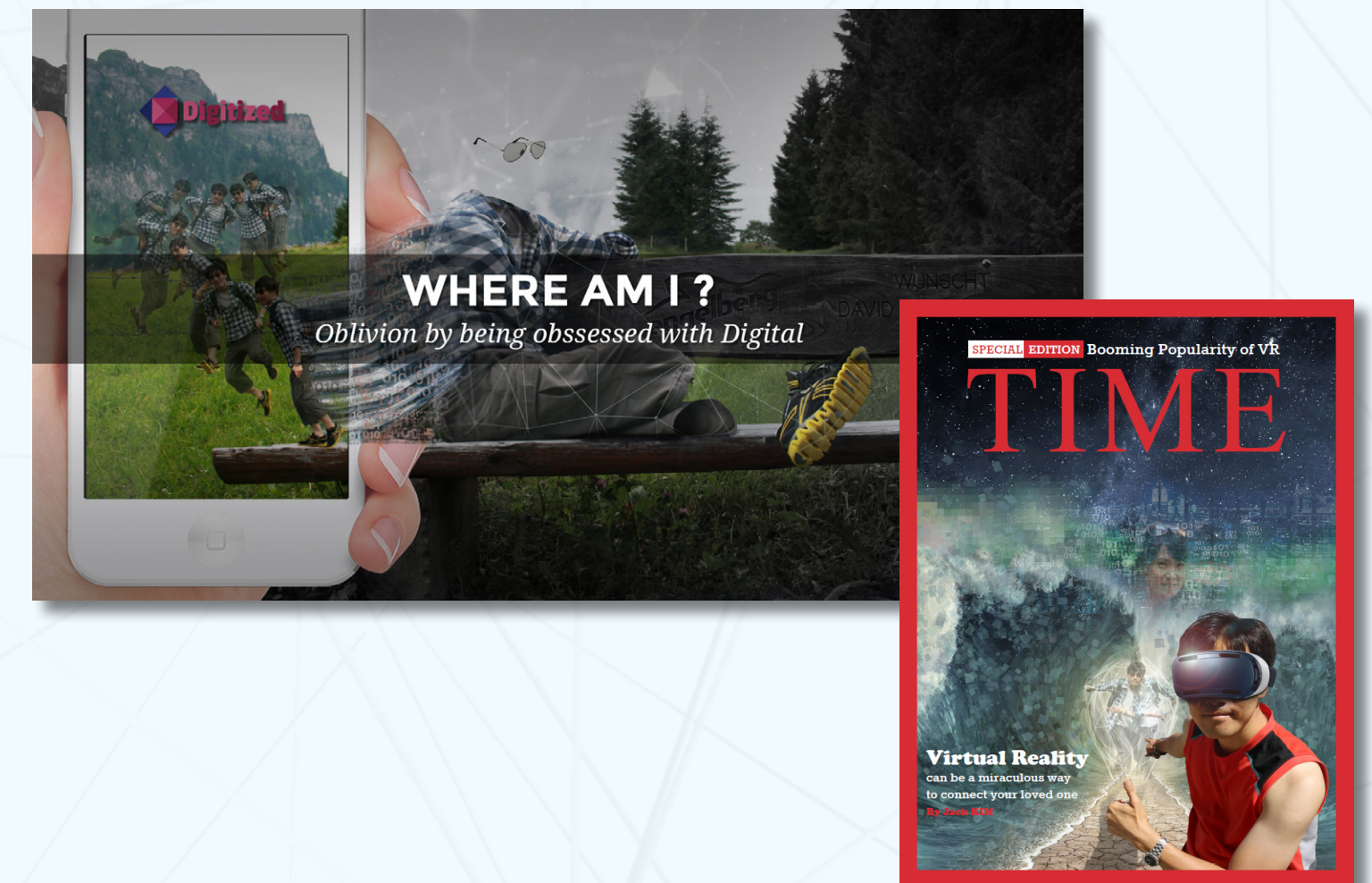
DreamWorld AR DreamGlass / Vlearn / Digital Imaging



- Demo @ **CES 2018, Las Vegas Convention Center**
- UX/UI design (Unity 3D, C#)
- Logo, branding, copywriting (Ai, Ps, Id)
- Responsive Web design (HTML5/CSS3, JS/jQuery)



- **Voice Controlled Educational VR Experience**
- **AT&T VR Hackathon Final Three nominated**
- Team Project
- Unity Design, C# scripting
- Apollo11 Moon Exploration



- **Visual storytelling by digital composition**
- Conceptual poster, Fictional Time magazine cover
- Adobe Photoshop
 - Masking, Customized Brushing, Blending
- Copywriting

DreamWorld AR + DreamGlass - detailed

WNM900 - Internship Fall 2016 (Chengying Zheng)

- Supervised by Vice President of R&D, **Jack Mao**
@ **DreamWorld USA, Inc. (San Mateo)**
- Demo @ **CES 2018, Las Vegas Convention Center**
- UX/UI design (Unity 3D, C#) for Augmented Reality Demo
- Logo, branding, copywriting (Ai, Ps, Id)
- Responsive Web design (HTML5/CSS3, JS/jQuery)



▲ Click images to watch demo video

▶ Journal Link

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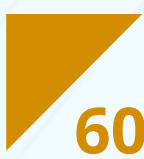
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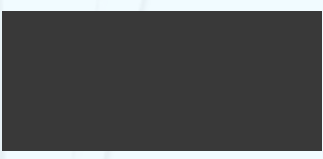
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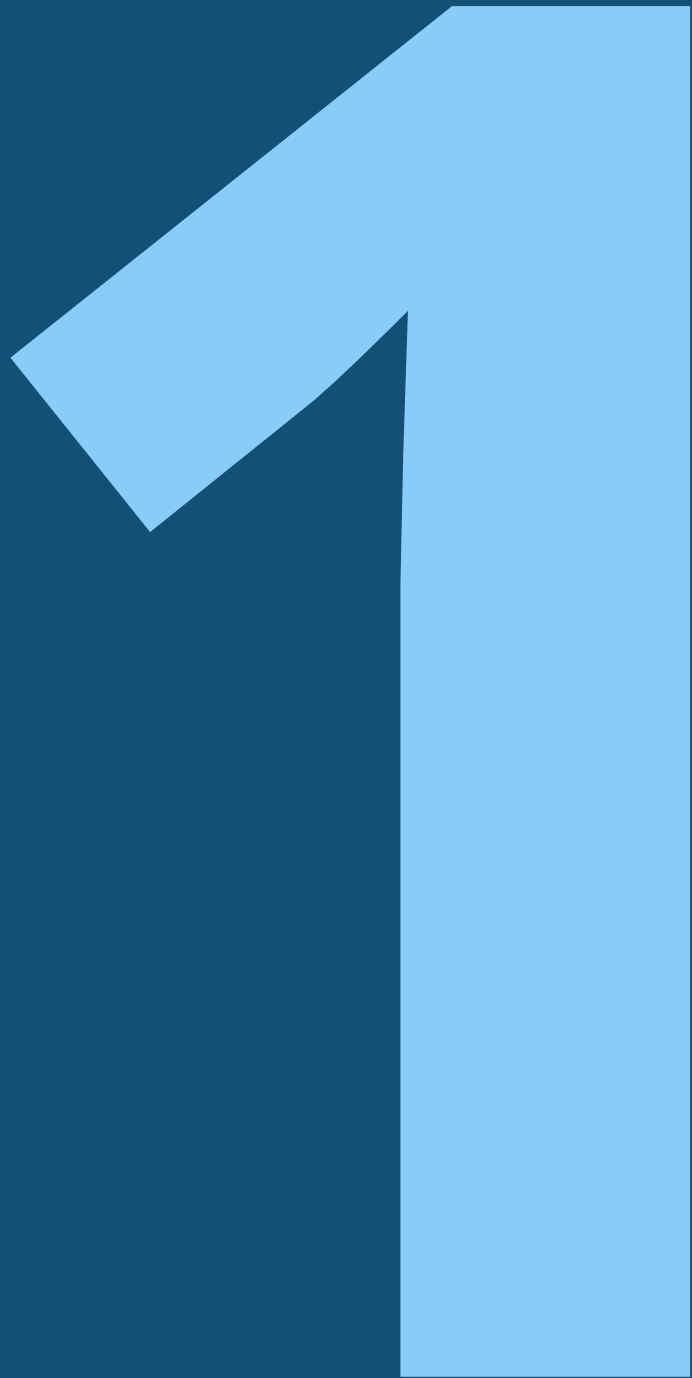
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Abstract

Chapter1



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Elevator Pitch

Overview



XENTITY is an interactive VR experience to explore the correlation between social media and our real identity. In my belief, the reality is better than the simulated. Digital technology enables us to transcend our real being and make us forget our responsibility, but the digital simulation cannot be substituted for real existence, self or world. Therefore, I am going to express my belief by an immersive VR experience.

**As a user begins to move,
a synchronized real-time particle animation will be composed of the VR background
which is being built their own new world by his/her movement.**



Abstract

Why Xentity?

Problem

Obsession with Social Media
Simulated identity by Big Data
Digital Oblivion

- Needs for an immersive experience to notice problem
- **Too abstract or too fun (Most VR contents)**
- A meaningful but game-like art piece by a cutting-edge technology is rare.

Solution

Ironically
attract a user to dive into a much deeper digital world
Embodied Awakening

- Stimulate self-reflection and creativity by real-time interaction
- **Immersion in an artistic VR simulations**
- **Find insight in the foremost digitized world**

“ Connected, but alone? ”

XENTITY is a playful VR experience but has an artistic purpose.

XENTITY gives a user an immersive experience with a message.

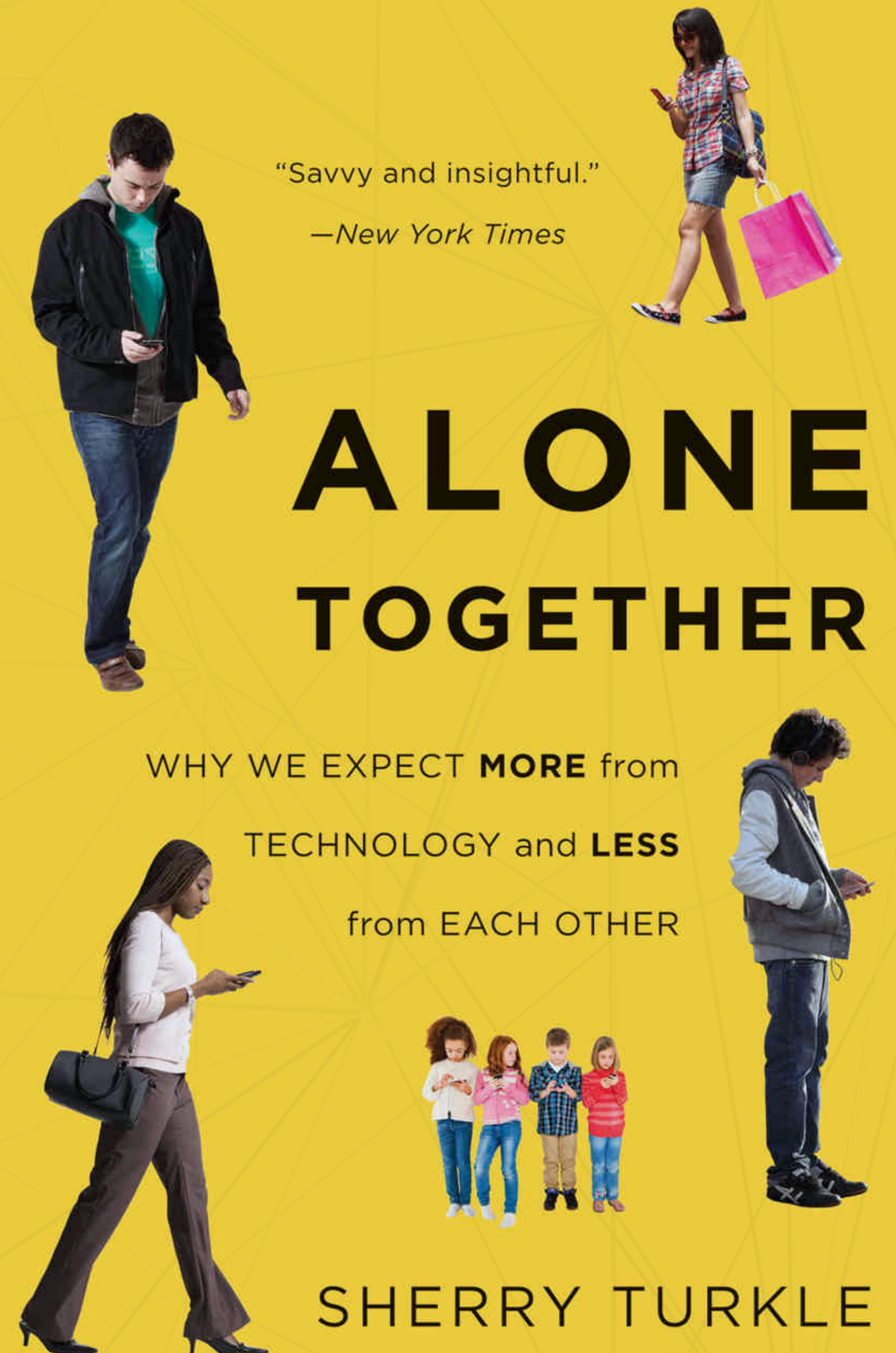
Creativity can be influenced by certain types of physical movement.

(“Fluid Movement and Creativity” - Michael L.Slein, Nalini Ambady, 2012)



XENTITY

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Statement of Interest

The Ultimate Goal

I am interested in an interactive user experience. To be specific, I hope that I can learn **how to integrate human gesture with immersive 3D real-time visualization.**

Especially, my passion is storytelling with visual language.

In addition, experiences for over five years as a VR/AR News Director enable me to learn how to design effective virtual or augmented realistic visual storytelling. Since I have produced pre-typed data visualization for live news broadcasting, **I wanted to know how to make a real-time data visualization in virtual and augmented reality.** This is why I considered and started developing a Web-accessed virtual reality project.

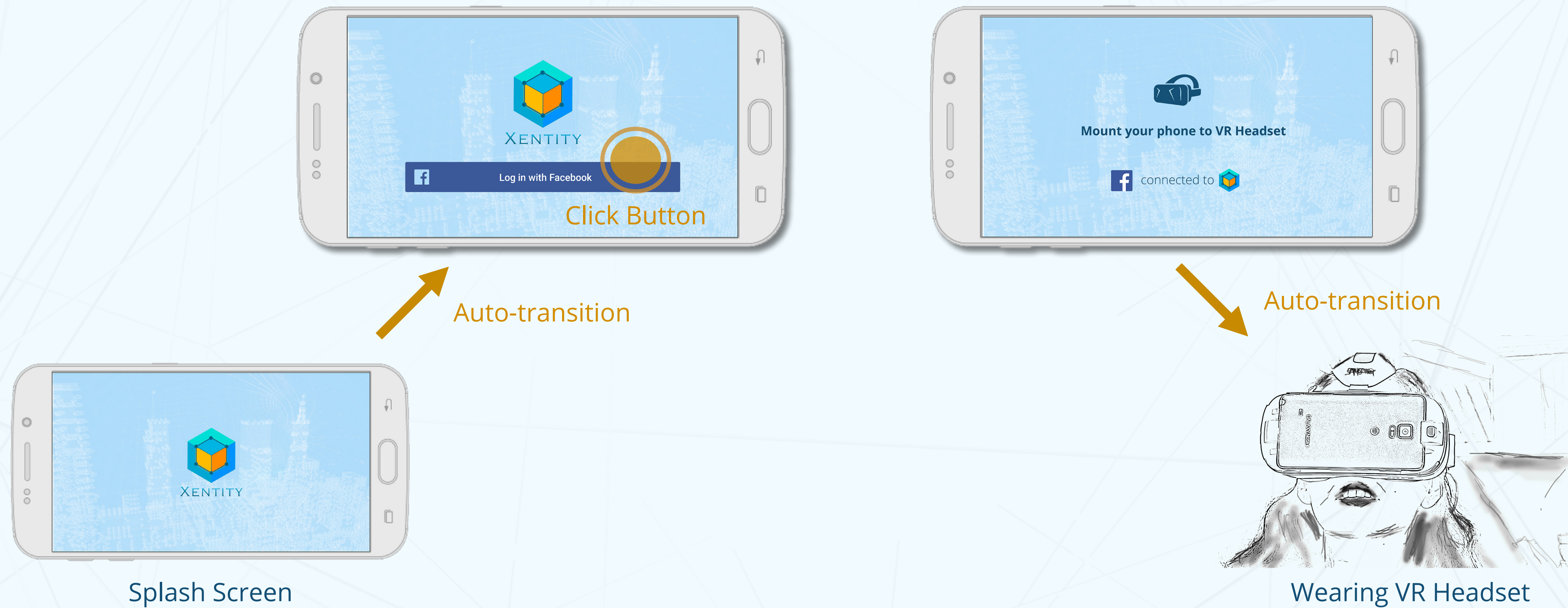
I believe that immersive visual storytelling is a much stronger way to deliver an expressional message to target audiences than traditional media. Furthermore, not only **real-time data visualization** but also **artistic simulation** can be an expandable usage of in immersive reality technology. Therefore, I have developed and designed **Web-based interactive VR simulation to deliver audiences immersive experience with my thoughts and philosophy.**

Proof of Concept



Connect Facbook

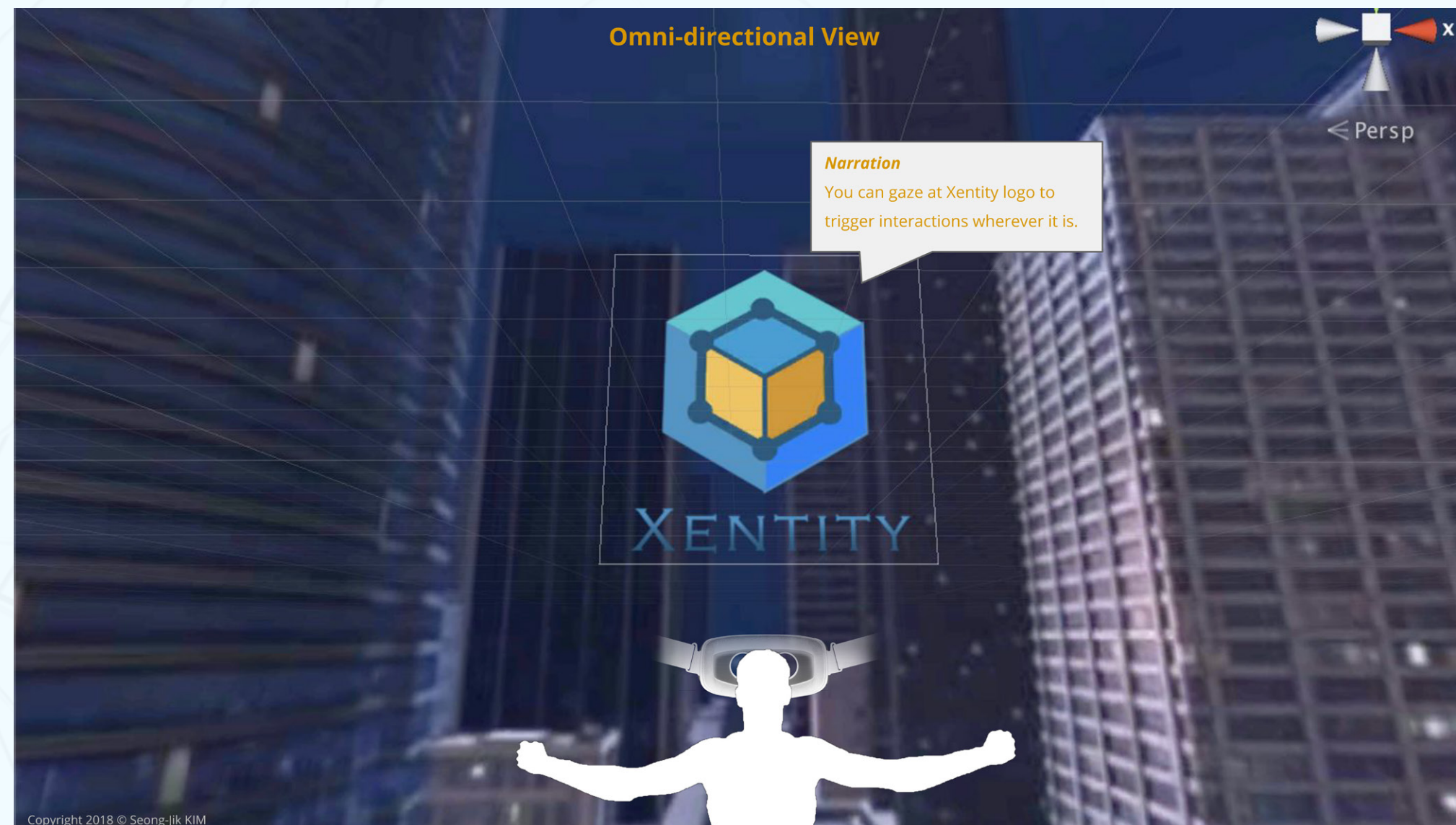
Proof of Concept - Preliminary



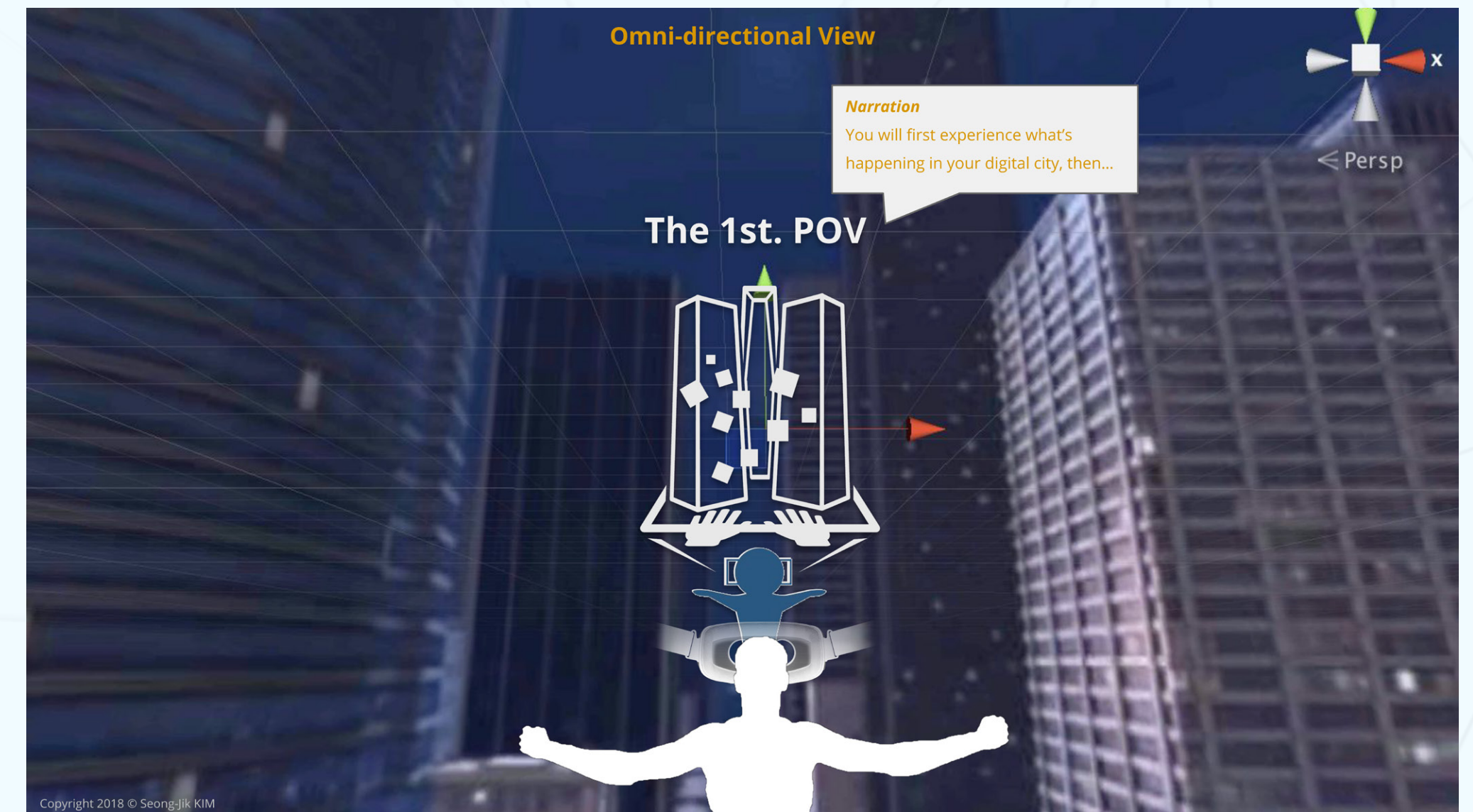
Interaction with Cityscape 1

Proof of Concept - Task1

1/6 A user starts VR experience. The logo is clickable to trigger interaction.



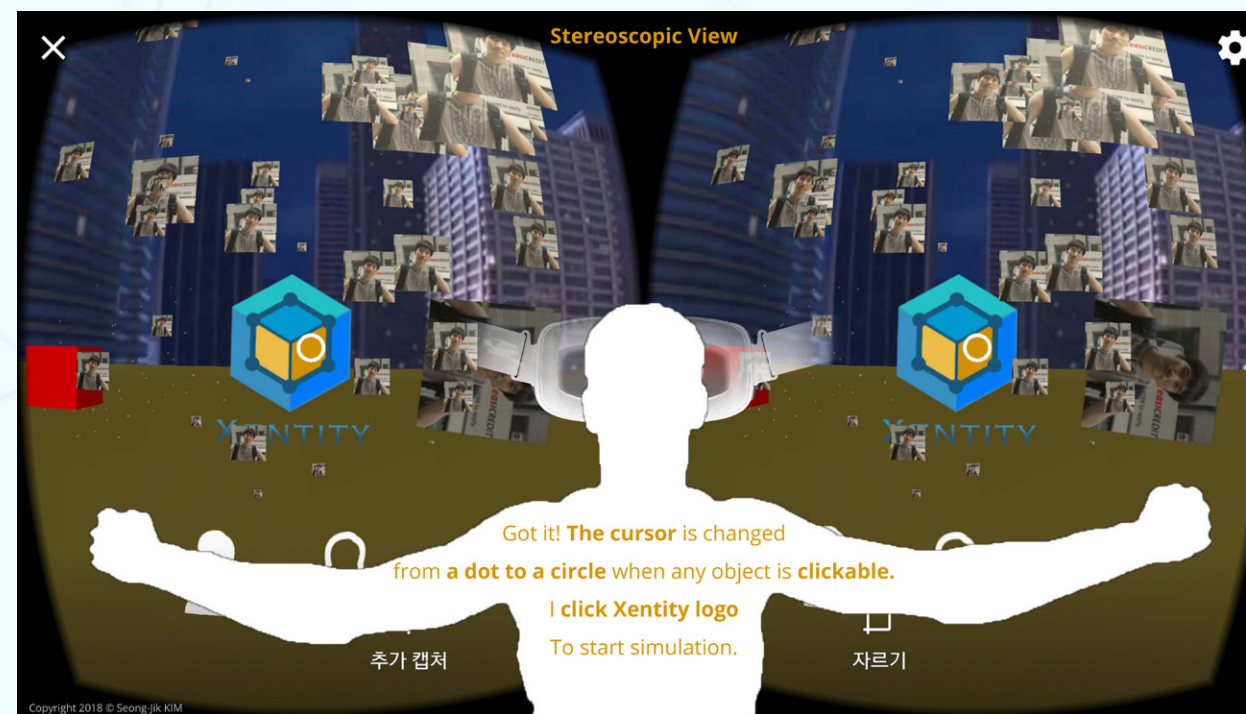
2/6 Xentity explains the 1st. person of view in a cityscape.



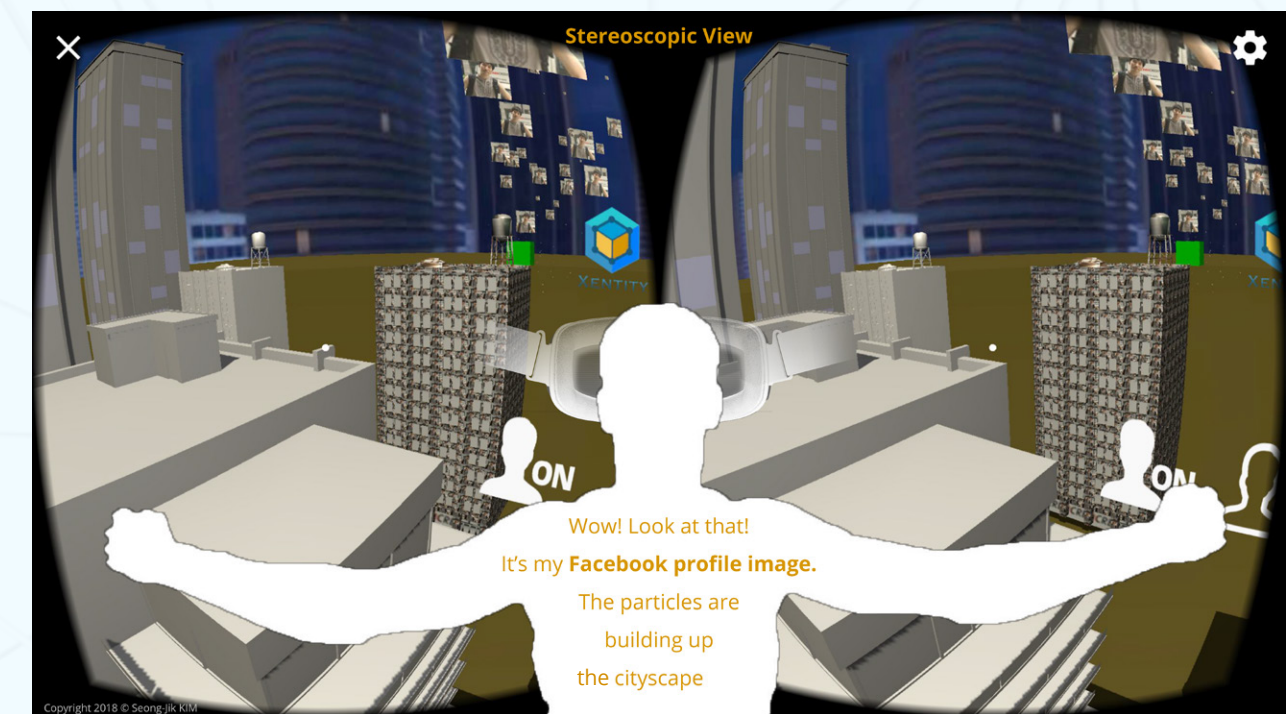
Interaction with Cityscape 2

Proof of Concept - Task1

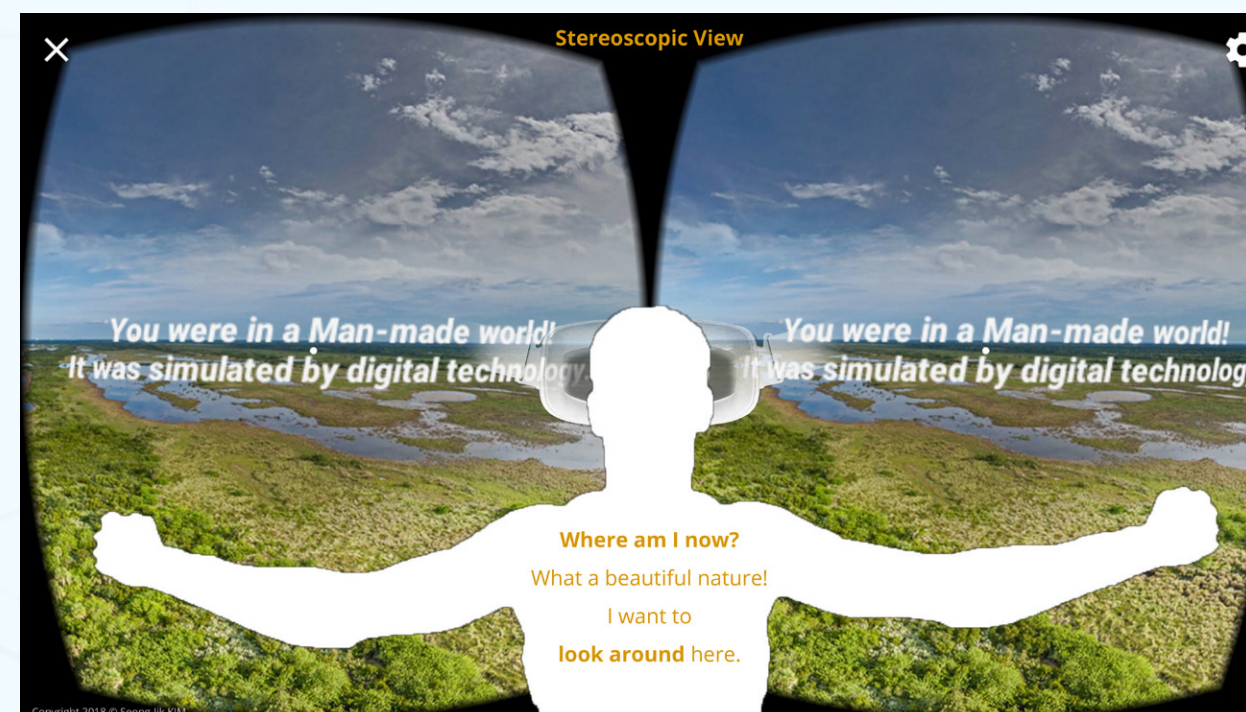
3/6 The user starts simulation by clicking the logo.



4/6 The user notices that images are mapped on buildings.



5/6 The user enters beautiful nature.



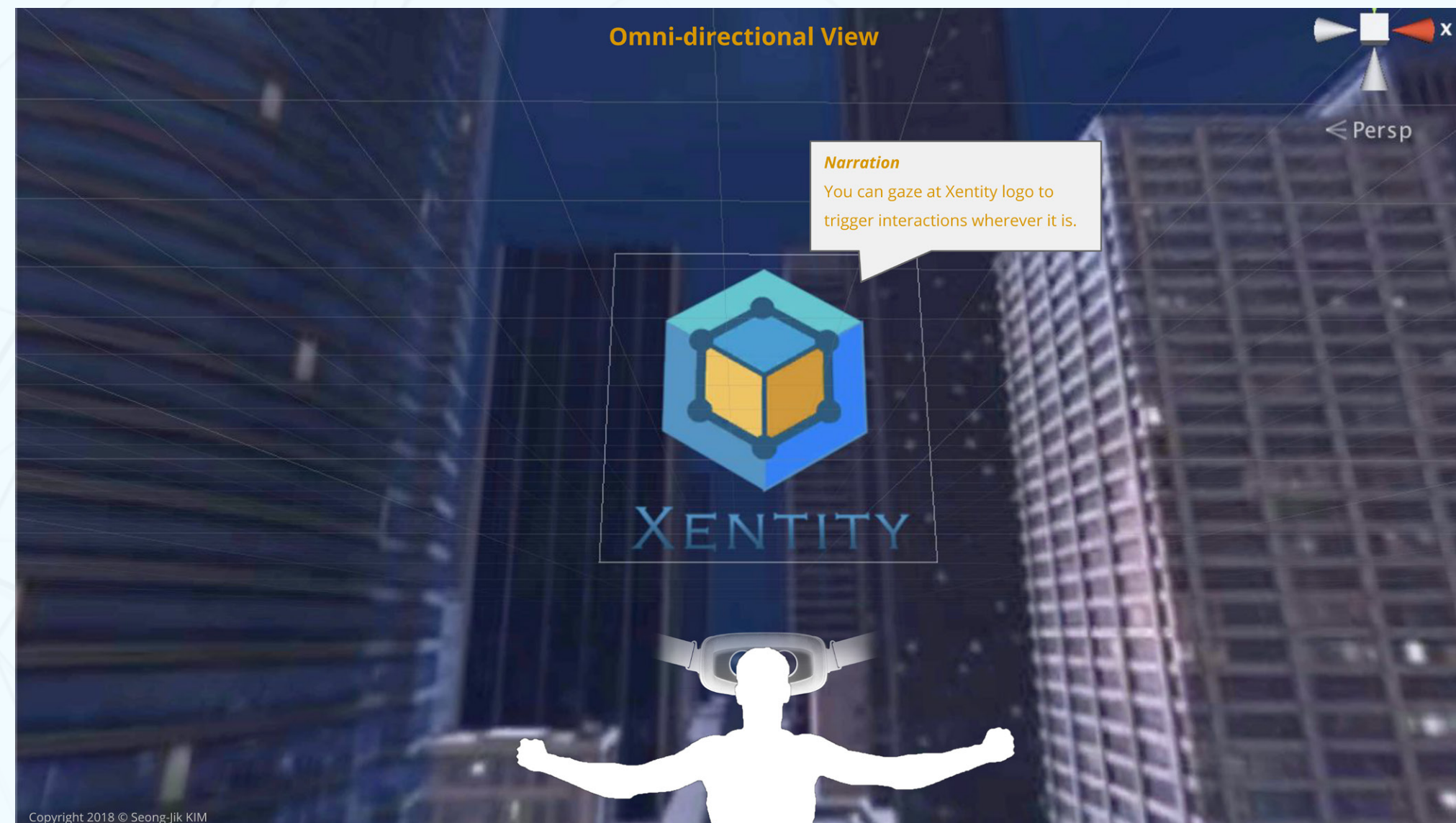
6/6 The user looks around and was noticed what is real.



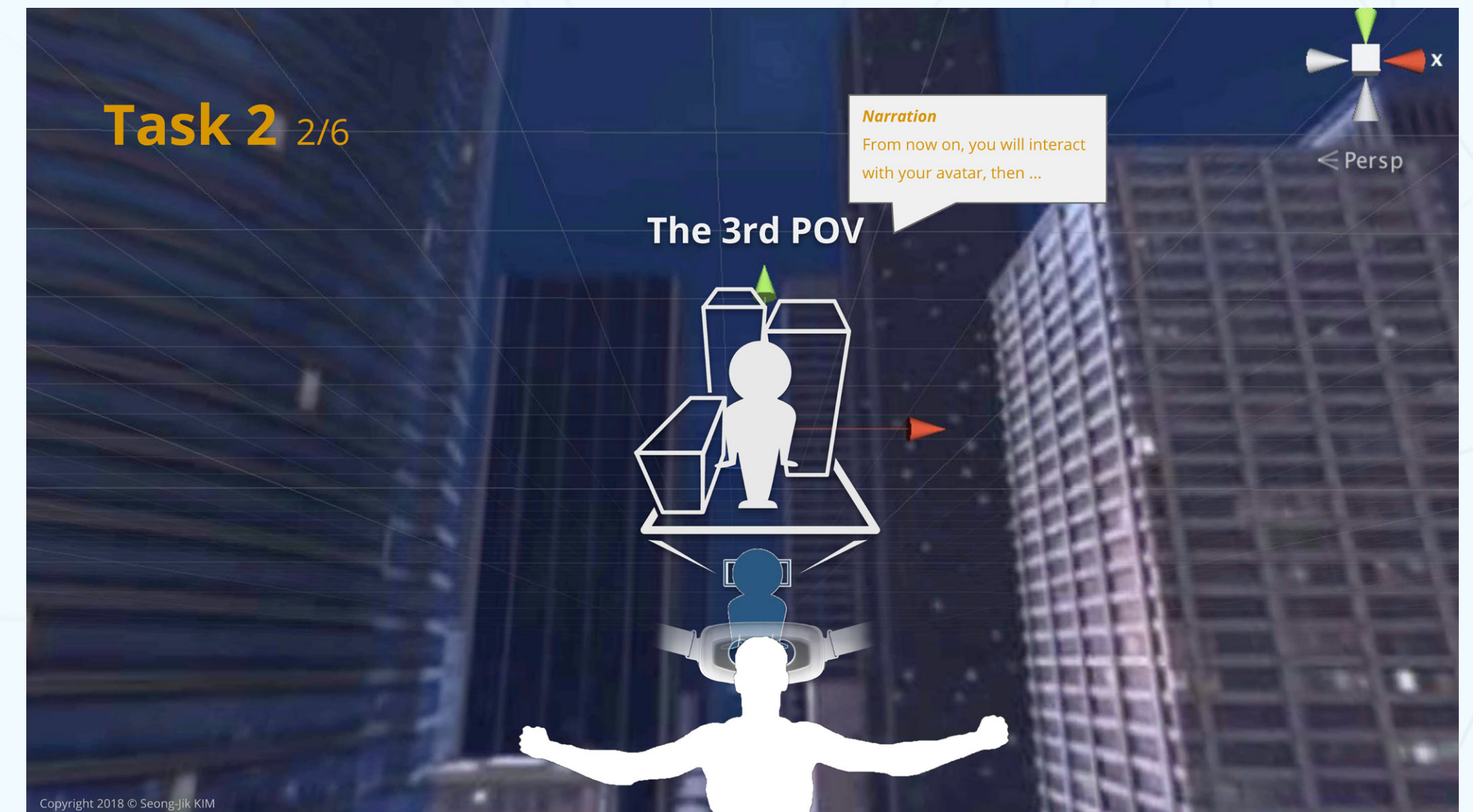
Share VR Experience 1

Proof of Concept - Task2

1/6 The user starts VR experience. The logo is clickable to trigger interaction.



2/6 Xentity explains the 3rd. person of view to interact with an avatar.



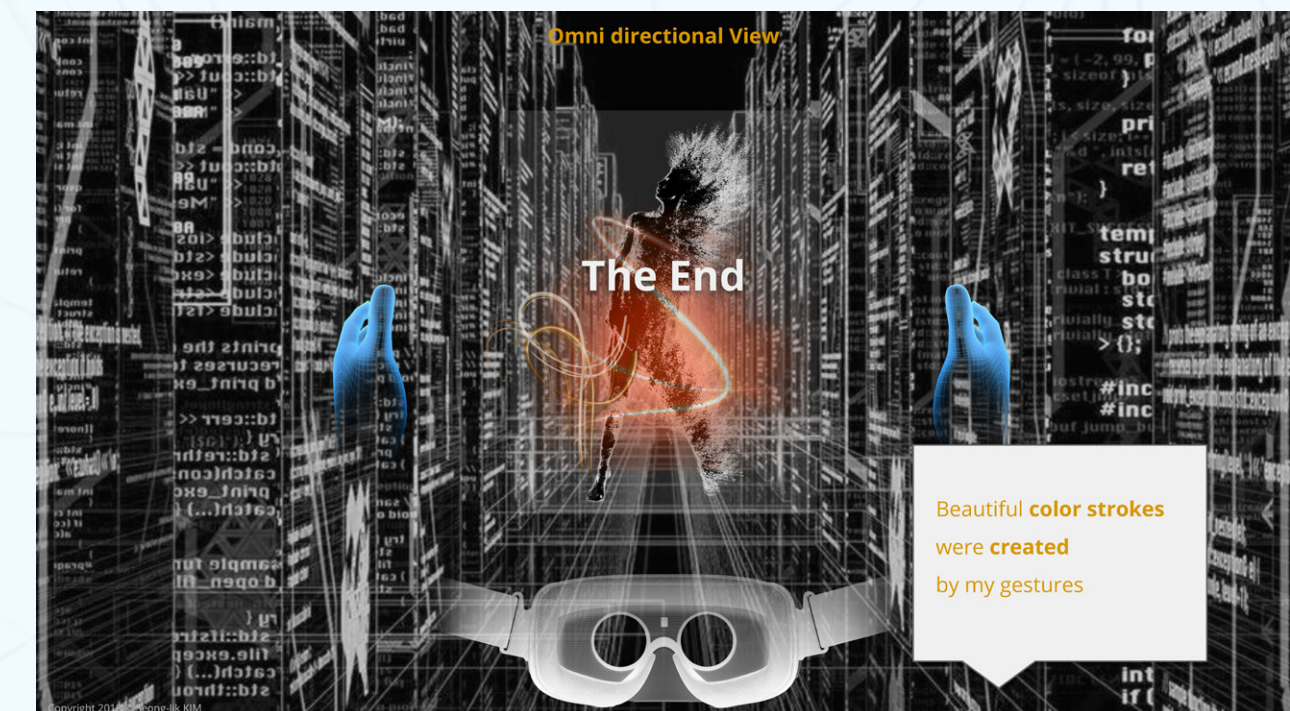
Share VR Experience 2

Proof of Concept - Task2

3/6 The user starts an interaction with watching avatar.



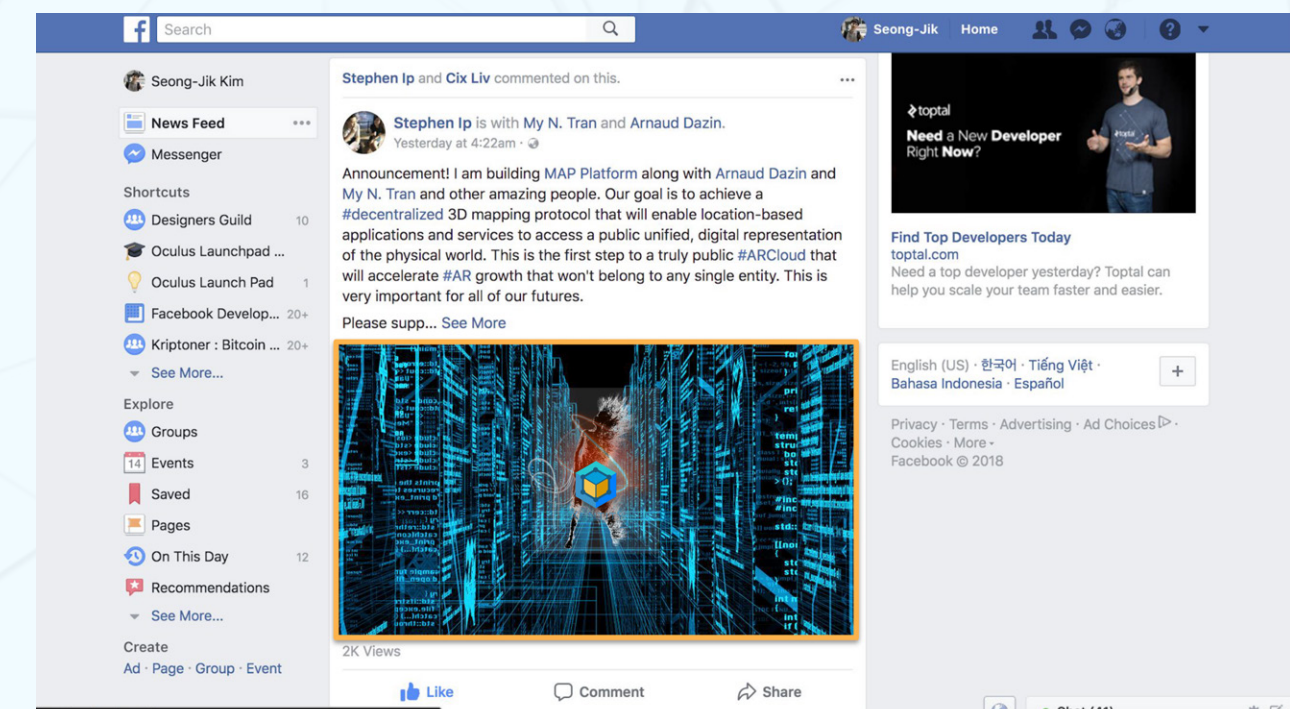
4/6 The user's interaction is ended.



5/6 The user clicks the logo to share this scene on Facebook.



6/6 The user is checking the post on his/her Facebook timeline.



Strategic Process

Chapter 2

Unique Positioning Statement

XENTITY is aiming not for the user to play game-like VR experience but to awaken user what he or she is doing in digitized everyday life. Immersive storytelling is much stronger than a story in two-dimensional screen, and user's body gestures strengthen his or her cognition and memory. Furthermore, mobile VR platform is more affordable to experience for users.



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Why Facebook?

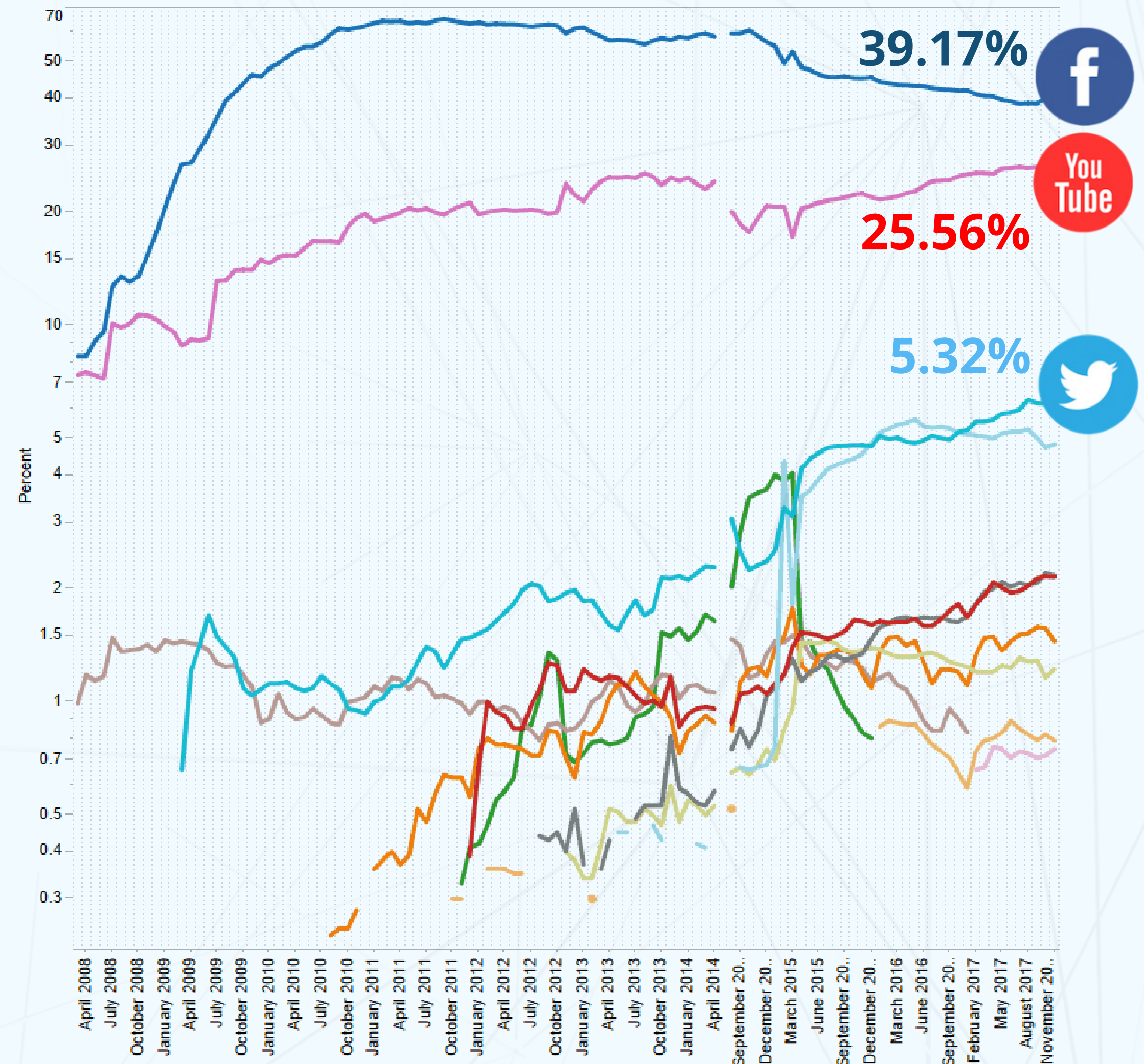
The most influential social media - updated on Dec 4, 2017

- **2.07 billion** monthly active users (Jan 1, 2018)
- **1.57 billion** mobile daily active users (Jun 24, 2017)
- **Every 20 minutes, 1 million links are shared, 20 million friend requests are sent, and 3 million messages are sent** (Jan 1, 2018.)

<http://www.dreamgrow.com/top-10-social-networking-sites-market-share-of-visits/>
<https://www.omnicoreagency.com/facebook-statistics/>

Top 10 Social Networking Sites
by Market Share of Visits 2008 to 2017

Priit Kallas, Dreamgrow.com



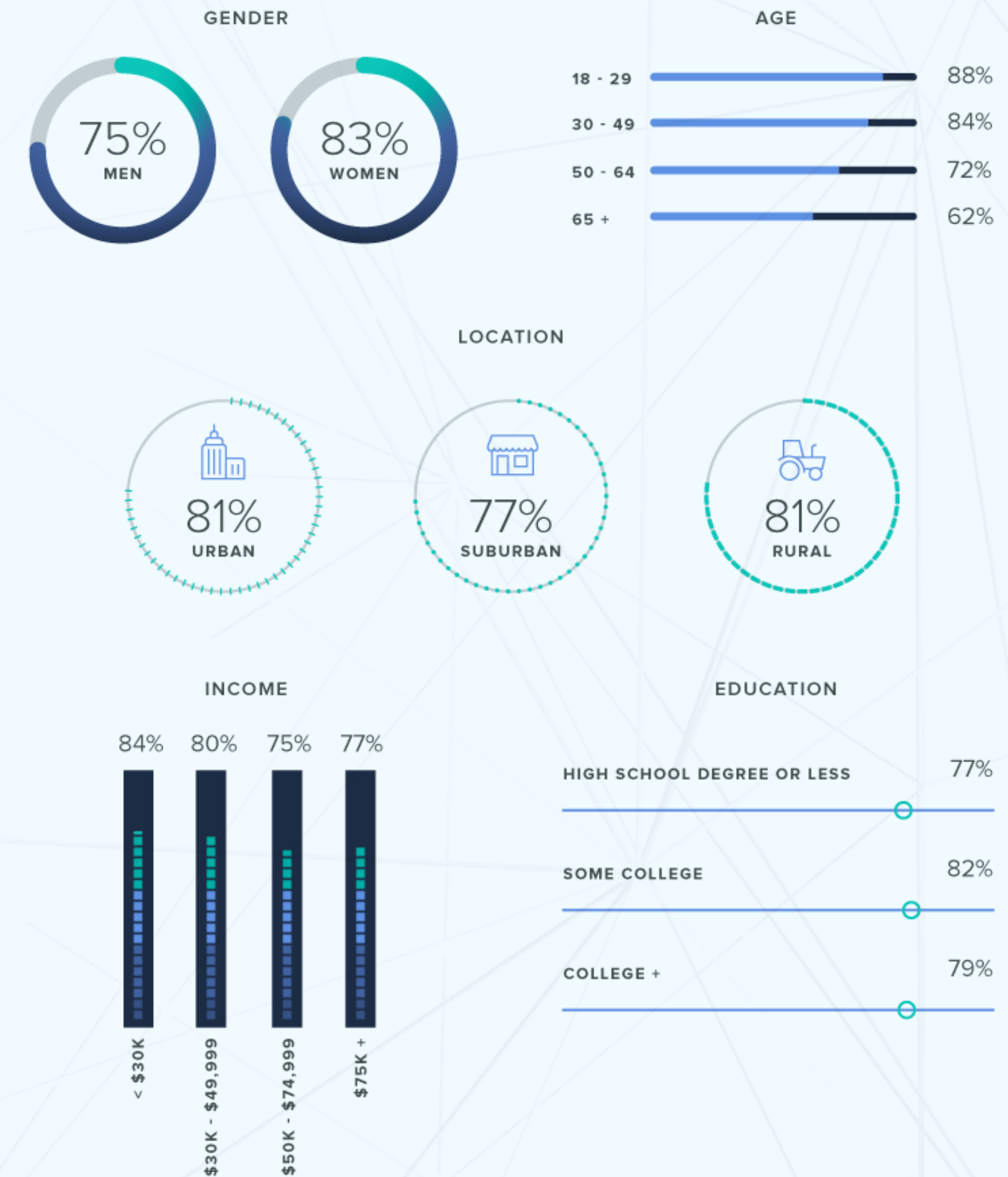
Why Photo on Facebook?

Photo posting is one of popular contents - updated on Jan 1, 2018.

- **350 million** photos are uploaded **everyday**.
- **14.58 million** photos are uploaded in **every hour**.
- **243,000** photos are uploaded in **every minute**,
- **4,000** photos are uploaded in **every second**.

<https://www.omnicoreagency.com/facebook-statistics/>

<https://www.smartinsights.com/internet-marketing-statistics/happens-online-60-seconds/>



Competitor I

Google Tile Brush

Features

- **HTC Vive**
- Intuitive user interface
- Very creative user outcome
- Dark black background and colorful interaction

Unexpected and creative user outcome is the strongest advantage of this VR experience. The user can sketch and paint in a 360 degree (6-DOF) canvas. Animated GIF format file can be stored.



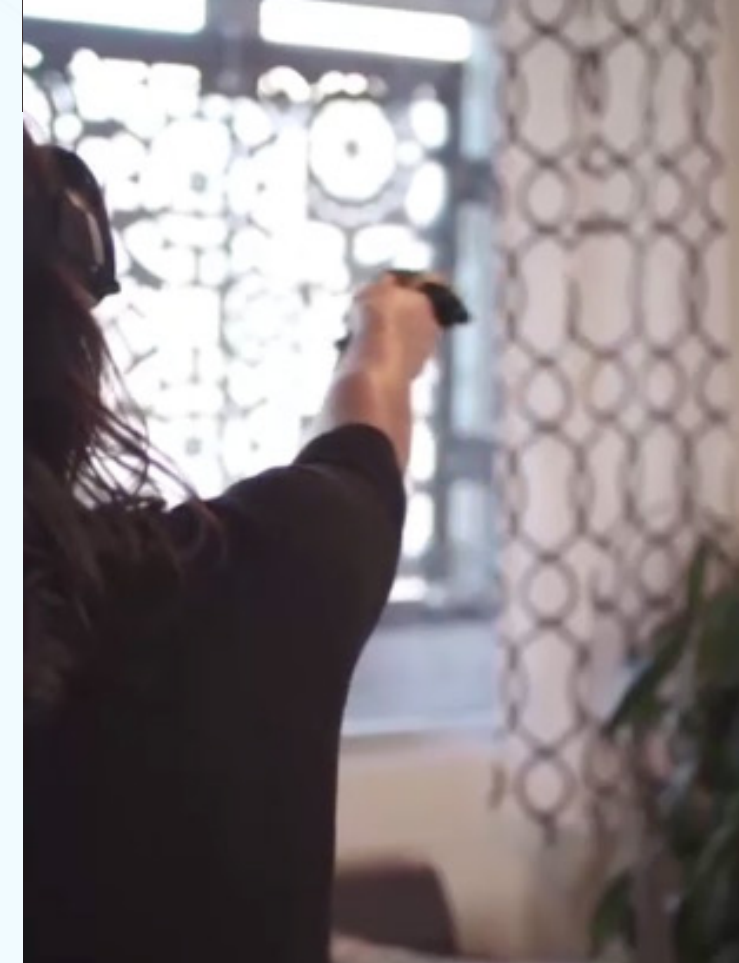
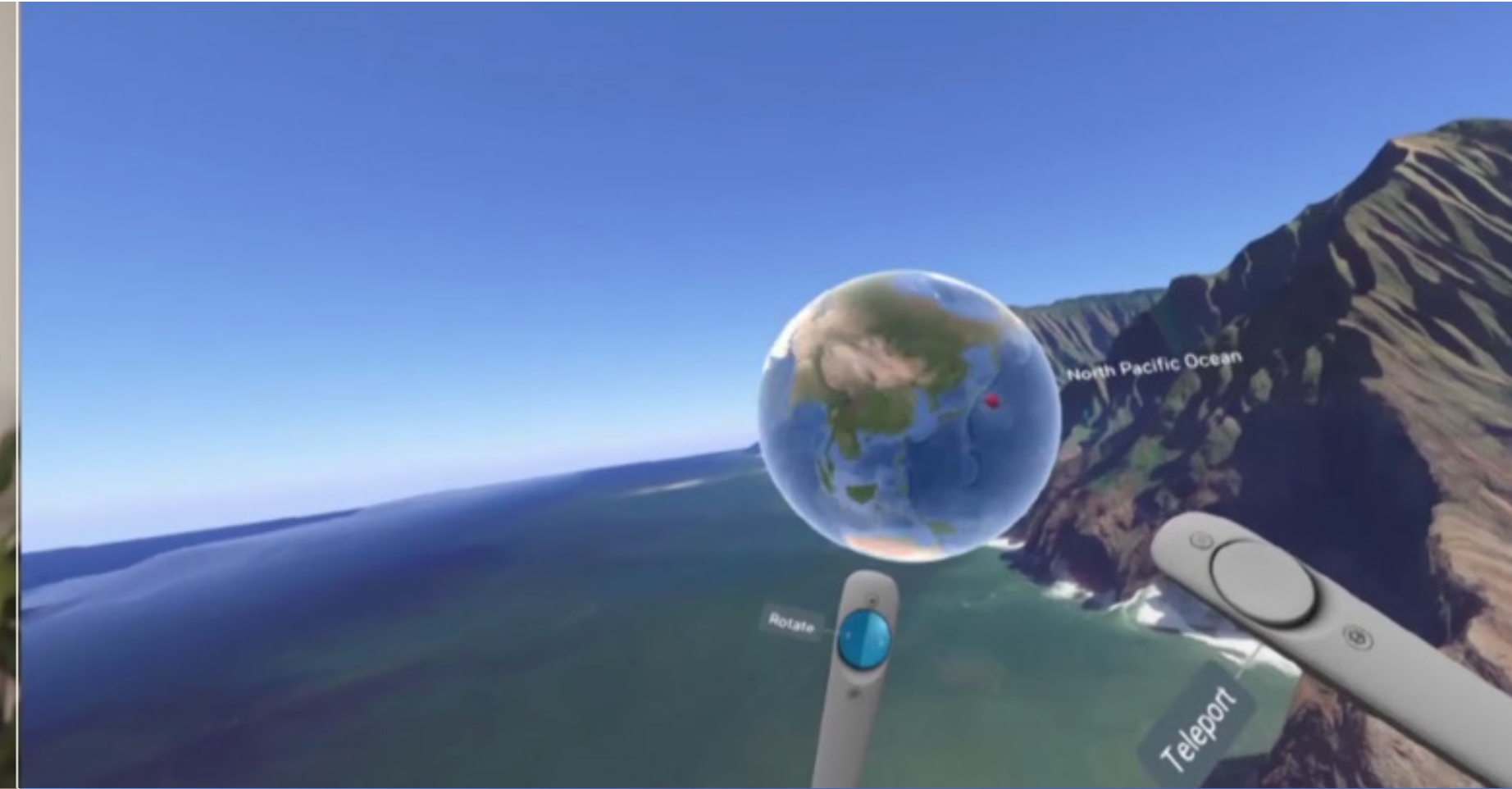
Competitor II

Google Earth VR

Features

- **HTC Vive**
- Earth navigation and explore wherever a user wants to go
- 360-degree immersive version of Google Earth App
- So realistic real-time rendering of 3D models

Google Earth VR is so amazing because it gives users mind-blowing experience exceeding the restrictions of time and space. However, it is only for simulational travel itself.



Competitor III

The City VR Experience

Features

- HTC Vive
- San Francisco Cityscape Exploration in VR space
- Time-change environmental simulation
- Take a specific screenshot of VR simulation

The City VR Experience was developed by a Stanford Computer Scientist. He is a co-founder of his startup, Amber Garage. A sibling product Skywand (www.skywand.com) is to combine this VR simulation with a drone captured video. Currently, San Francisco is only available, and New York and Chicago are preparing for release.



Competitor Matrix

Uniqueness of Xentity

*Three unique points

Product				
Cost / UI dev.	Expensive	Expensive	Expensive	*Inexpensive
Flexibility	Unlimited	So flexible	Flexible	Flexible
Purpose	Creative work	Virtual Exploration	Virtual Exploration	*Expressional
Connectivity	X	X	X	*Social Media connected
Visualization	Abstract and artistic	Very realistic	Realistic	Artistic + realistic

Inspiration I

The Treachery of Sanctuary

Features

- **An Art Installation (2012)**
- Installed and exhibited all over the world (SF, Seoul, Paris, London, and so on)
- A story of birth, death, and Transfiguration
- Three Kinect sensors, MS Kinect SDK, Unity3D

The Treachery of Sanctuary is a New Media Leading person, Chris Milk's art installation with Kinect sensing and real-time visualization. Though this is not a VR art piece, I was deeply impressed by experiencing this art installation in person in Seoul four years ago. **This is designed to mono-tone and with transforming particles, I am making colorful particle animation in VR simulation.**



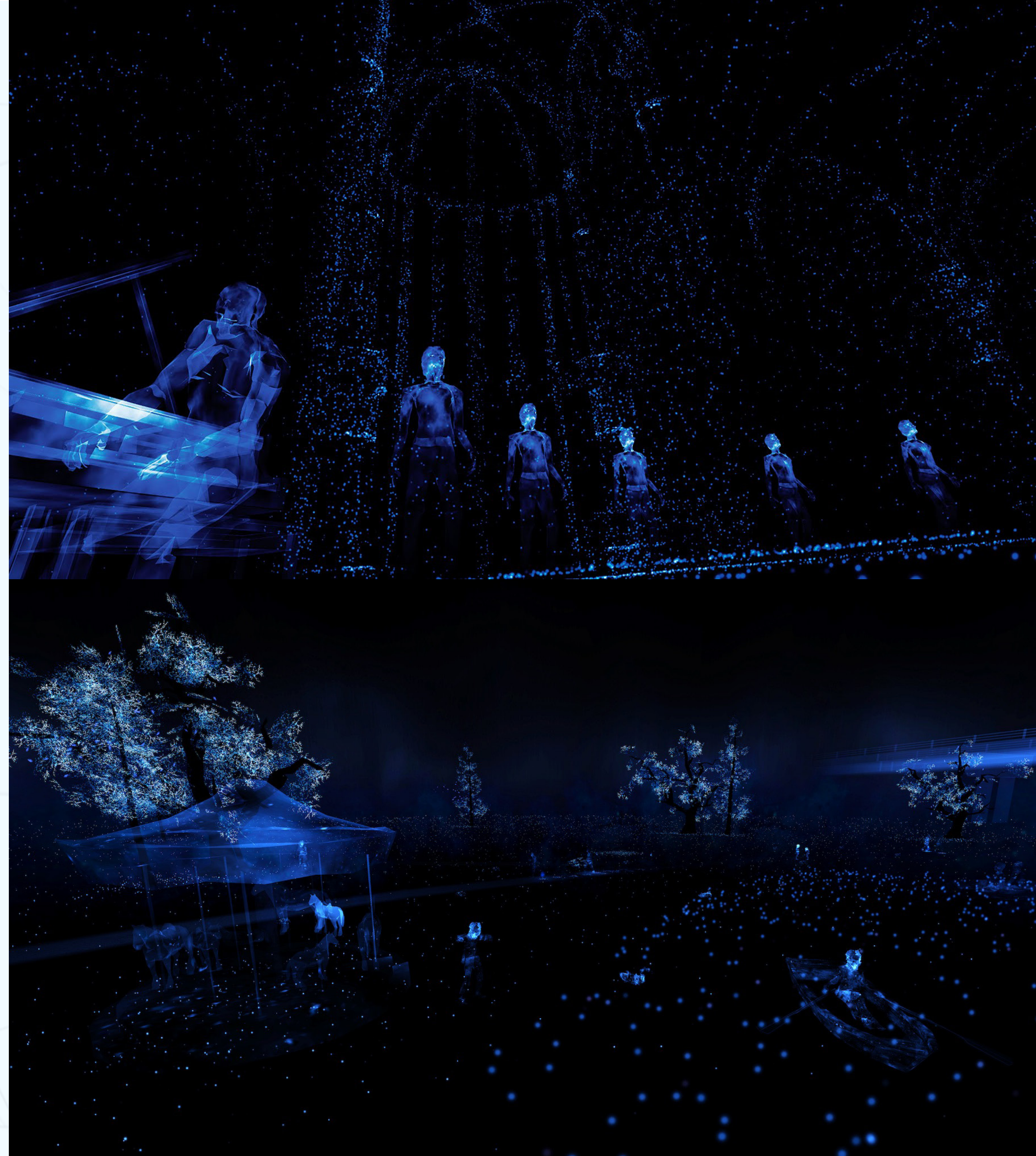
Inspiration II

Notes on Blindness: Into Darkness

Features

- Available on **Gear VR, Oculus Rift**
- Mobile VR is the best platform for an empathetic VR experience.
- Audio guide and sound effects are necessary for first experiences.
- Suitable audio panning effectively strengthens users' concentration on directional movements of visual components.
- A use of consistent trigger inputs is required for users to recognize how to interact in VR simulation.
- Three seconds gazing input is used for spatial movements in VR experience.
- Clicking touchpad is used for selecting inputs. options as a user input.
- Text indicators help users to navigate in VR experience.

This VR experience is based on an Australian professor John Hull's voice recording. **Users can experience a blind person's feeling by simulational and immersive experience.** Audio elements are also important for immersive VR storytelling.



UX/UI Design

Chapter 3

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Audience Interview

Questions for insights

Q1. What is your experience related to VR?

Have you ever experienced non-gaming VR contents?

Q2. Which VR tools(#1) and VR platform(#2) do you know about or have you ever already used?

(#1) Unity3D / Unreal / WebVR (A-frame / React JS)

(#2) Vive / Rift / PSVR / GearVR / Daydream / Cardboard / etc

Q3. Which VR platform do you think the best fit for Xentity VR? And why?
(High-end VR vs. mobile VR)

Q4. Xentity is integrated with Facebook SDK, so it could be scaled up for social VR concept. If your friend's VR experience could be loaded on your own VR scene or posted on Facebook, could it be a killer feature of Xentity?
What's your thought? Any other suggestions?

Q5. I would like to hear the overall impression of my project.
Feel free to write your opinions.

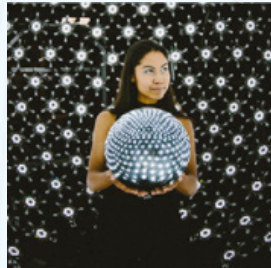
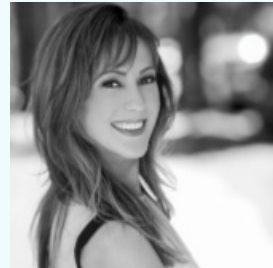
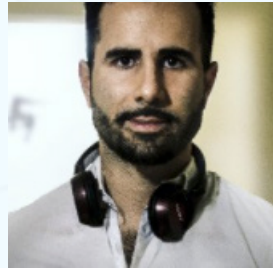
Personal Questionnaire

- Age:
- Background or Occupation:
- Professional Goal:
- Personal Interest:
- Which social media do you the most frequently use? (Choose one) :
- Facebook / Instagram / Twitter / Youtube / Linkedin / WhatsApp / WeChat / Tumblr / Snapchat / etc.
- Which social media do you the secondly use? (Choose one) :
- Facebook / Instagram / Twitter / Youtube / Linkedin / WhatsApp / WeChat / Tumblr / Snapchat / etc.
- Use of Technology (choose one in each row) :
 - iPhone / Anroid
 - MacOS / Windows
 - VR / AR (which is more compelling to you?)
- The most painful point of VR/AR/MR (one ~ four words) :



Audience Interview Results

Answers Table | March 4~11, 2018

							
	Kayla Briet 21yo, Los Angeles. CA	Christian B. Park 38yo, San Jose, CA	Changying Z. Zhang ??yo, San Francisco. CA	April Bliz 40yo, Saint Paul, Minneapolis	Fede Ponce 36yo, Santa Monica, CA	Andrea Davies 27yo, San Diego, CA	Becky Haruyama ??yo, Seattle, WA
Background	TED Speaker, Filmmaker, Compoer, VR Creator	Mobile UI/UX Designer @Samsung Electronics	Design Educator, Edtech Specialist	Founder of Trailblazing VR	Creative Director, Sr.Consultant of future vision @Nissan Motor corp.	Graphic Designer, Web Designer	Event & Community Strategist @AltspaceVR
Professional Goal	Run my own business for media production and arts	Rich retirement budget before age 55	X	Become te main source and contact all things AR, eSports	Disrupting tech. industry	I hope to be a creative director.	Waiting for reply
Interest / Passion	Storytelling	Loving Jesus Christ and evangelisim of Christianity	X	Travel, Food	Humanizing technology	Outdoor activities, design, yoga, and so on	Waiting for reply
Use of Technology Interested immersive tech	Android+iPhone, Mac+Win VR+AR	iPhone, Mac AR	Android, Mac+Win VR+AR	iPhone, Mac AR	Android, Mac+Win VR+AR	iPhone, Mac+Win I don't know about both	Waiting for reply
VR Experience	Room scale, 360 video. interactive, non-interactive	360 video only on mobile device	Non-gaming VR experience	Published an AR game, Experience non-gaming VR	Yes, I have.	I never experienced VR.	Waiting for reply
VR Tool + Platform experienced / known	Unity All VR platform	Unity GearVR, Cardboard	Unity, WebVR All VR platform	Unity Rift, GearVR	Unity Vive, GearVR, Cardboard	I have never heard about it.	Waiting for reply
Best fit VR platform for Xentity	Mobile VR (WebVR is not bad)	Mobile VR	Google Cardboard	Mobile VR	High-end (room scale) VR because of rich experience	Mobile VR (just guessing)	Waiting for reply
Use of Social Media Number1 & 2	Instagram, Facebook	Instagram, Facebook	Linkedin, Facebook	Instagram, Linkedin	Linkedin, Whatsapp	Instagram, Snapchat	Waiting for reply
Thought of FB integration of Xentity	Great feature. Shareability could be better	Definitely good. FB is the #1.social media.	It is important	It's fascinating idea because of social sharing	Good.	Sounds like a fun way to interact	Waiting for reply
Any comments for Xentity	I like your techy commnets of impacts on social relationship	Lack of contents. Gain more relevant contents from social media	Concept video is a little vague.	I'm impressed by your creativity and talent.	Very interesting concept, but this be better suited for AR.	I think it is really cool.	Waiting for reply

Conclusions

by Audience Interview | March 11, 2018

I can adopt feedbacks in Xentity!

- **Mobile VR** could be the best fit for Xentity concept.
- I would like to create an **Android cardboard VR app** first because it will be fit for **the widest spread smartphone**.
- I choose **Facebook** as a connected social media to Xentity, because it's **the world largest social media**. Over 20 billion people globally use Facebook.
 - The most used social media: Instagram
 - The secondly used social media: Facebook and LinkedIn
- **Connectivity by Facebook SDK is the key technology** of Xentity, because it has a pretty promising strength for **sharing immersive experiences** and **scaling-up interactivity with social media connections**.

I refined and redefined target audiences, user personas, and stories by this round audience interview results. My user personas are based on real audience, but I fictionally modified their profile and stories for better UX design.

Target Audience

Interactive VR experience

Primary

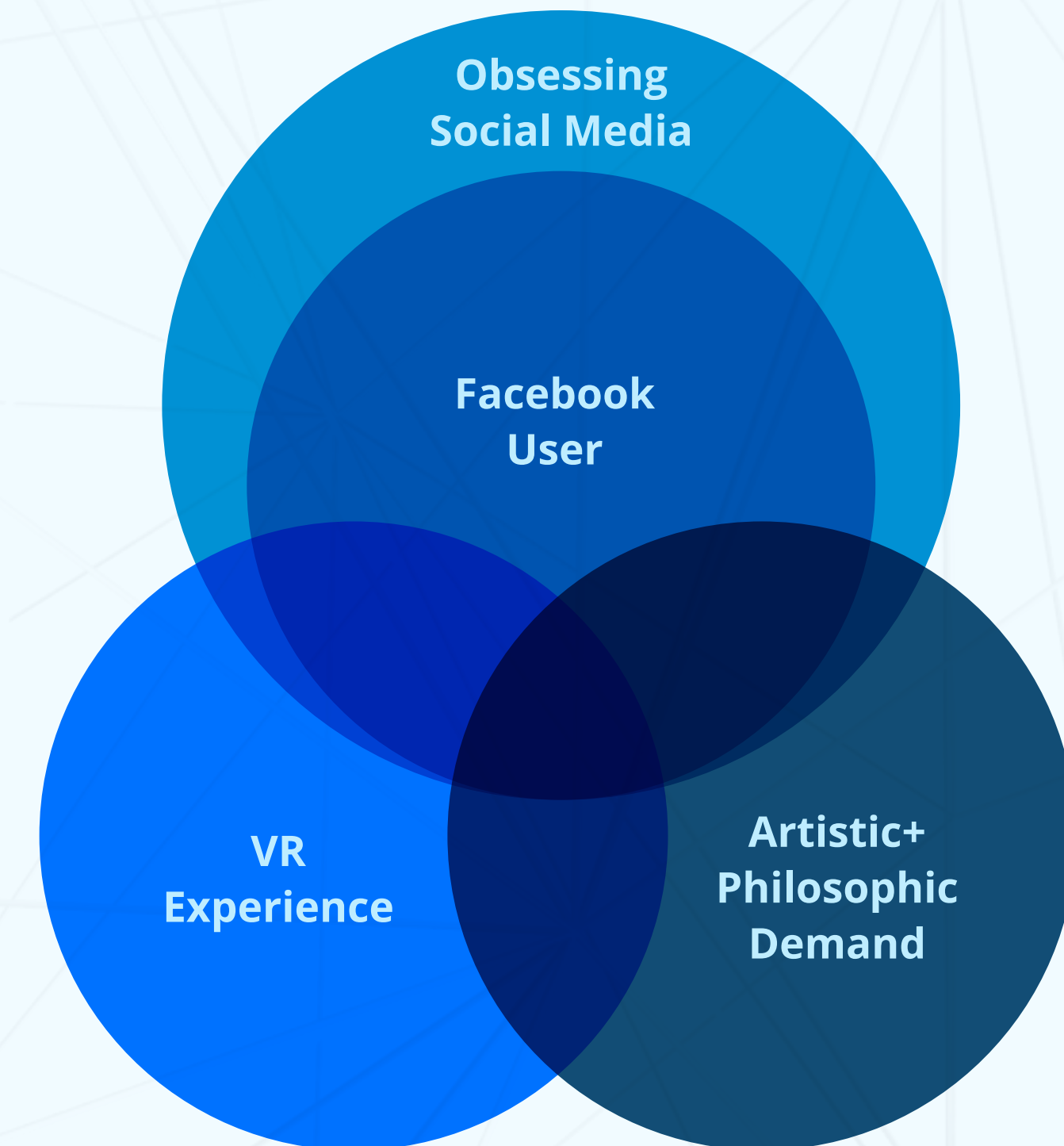
- **Facebook Savvy**
- Highly educated and creative people (familiar with visual language)
- **Competent to create VR contents** (able to design and develop)
- Looking for a non-gaming VR experience delivering some philosophy
- **Expect to get artistic inspiration by VR experience**
- Oculus Rift owner but interested in mobile VR

Secondary

- 25~44 years old **Product Designer**
- Mid-income photograph hobbyist (Semi-pro digital camera owner)
- Considering to **design an emerging tech product integrated with social media**
- Want to research and experience about VR/AR stuff for his/her ideation

Tertiary

- 20~55 years old tech trends follower
- habitually use social media and share good information on his/her social media timeline.



User Persona

Primary

Kayla Briët Los Angeles, California

- 21 years old
- TED Speaker, Filmmaker, Composer, VR Creator
- **Oculus Launch Pad Selected Member**
- **Award Winning Contents Creator**
- iPhone+Android, Mac+Windows, VR+AR
- 2,927 Friends in Facebook
- almost 1,700 photos already posted on FB

"I want to experience a visual integration between my Facebook photo and an immersive storytelling."



Friends



Photos

Currently using

8

Social Media

Kayla is a very talented young artist. She is a TED 2017 fellow and talked about her original American heritage and her own art based on her genetic identity. Unity3D engine based Virtual reality and 360-degree film are also her creative media as a visual storyteller.

She plans to make a more affordable VR storytelling contained technical interpretation of her identity.

Kayla expects to experience an artistic VR simulation to get inspiration for digital arts with immersive technology.



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User Persona

Secondary

Bum Park Mountain View, California

- 38 years old
- Mobile UX/UI Designer, Samsung Electronics
- **MFA 3D Animation & VFX, AAU (2012)**
- **Professional level photographer, Christian**
- iPhone, Mac, VR+AR
- 1,313 Friends on Facebook
- 6,873 photos already posted on Facebook

"I want to share my VR experience, with my friends, which is combined with my photos because my photos contain my belief."



Habitually, Bum has brought his DSLR camera to shoot everyday life and posted them on the Facebook album almost every day. Additionally, he begins to be interested in VR contents.

Hopefully, as a Christian, he would like to post snapshots captured in Sunday mission service in VR space as well as Facebook, because it could be helpful for evangelism of Christianity.

If the interactivity between social media and a VR is successful and smooth, he is willing to use VR beyond his doubt of VR technology and suggest a project to his UX design team.



User Persona

Tertiary

Fede Ponce Santa Monica, California

- 36 years old
- Creative Director, General Manager
- Sr.Consultant of future vision @ Nissan Motor
- **Owned High Res Hype, Inc.**
- **Specialized in futuristic UX, IoT, Connected Car**
- Android, Mac+Windows, AR
- 3,324 followers on **LinkedIn**

"I want to find a possibility for augmented reality to be connected to social media. It can be adopted for HUD in a self-driving car."



Connections



Postings

Creatively directed

35

clients for career

Fede is very competent at concept-driven UX design. His creative achievement won 'Eyes on Design' Award at Noth American International Auto Show 2018, Detroit. Nissan Infinity Q is named to 'Best Concept Vehicle.'

Since his specialty is to design futuristic UX for an autonomous vehicle, he looks for a new feature to pull driver's social media database into an augmented reality dashboard.

He comes to know Seong-Jik's new VR prototype integrated with Facebook SDK, so really want to experience it in person for his curiosity.



XENTITY

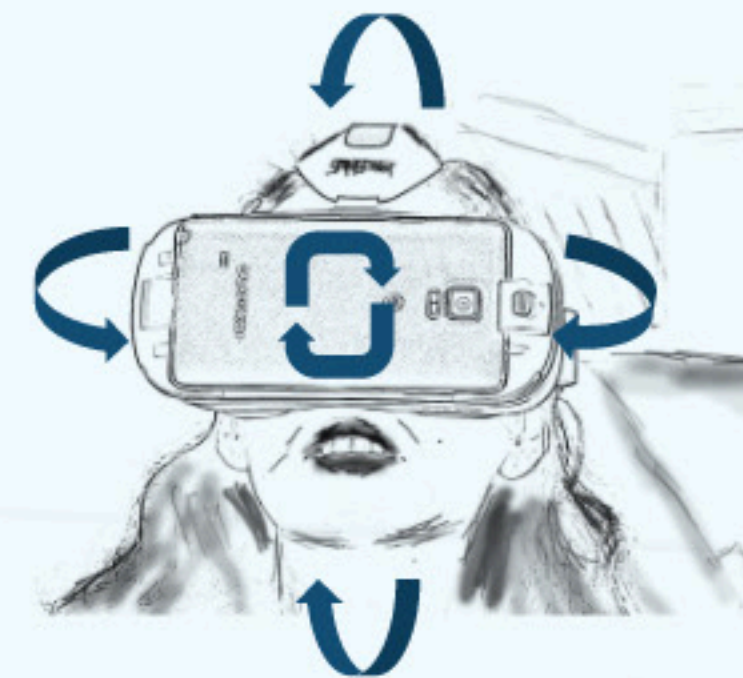
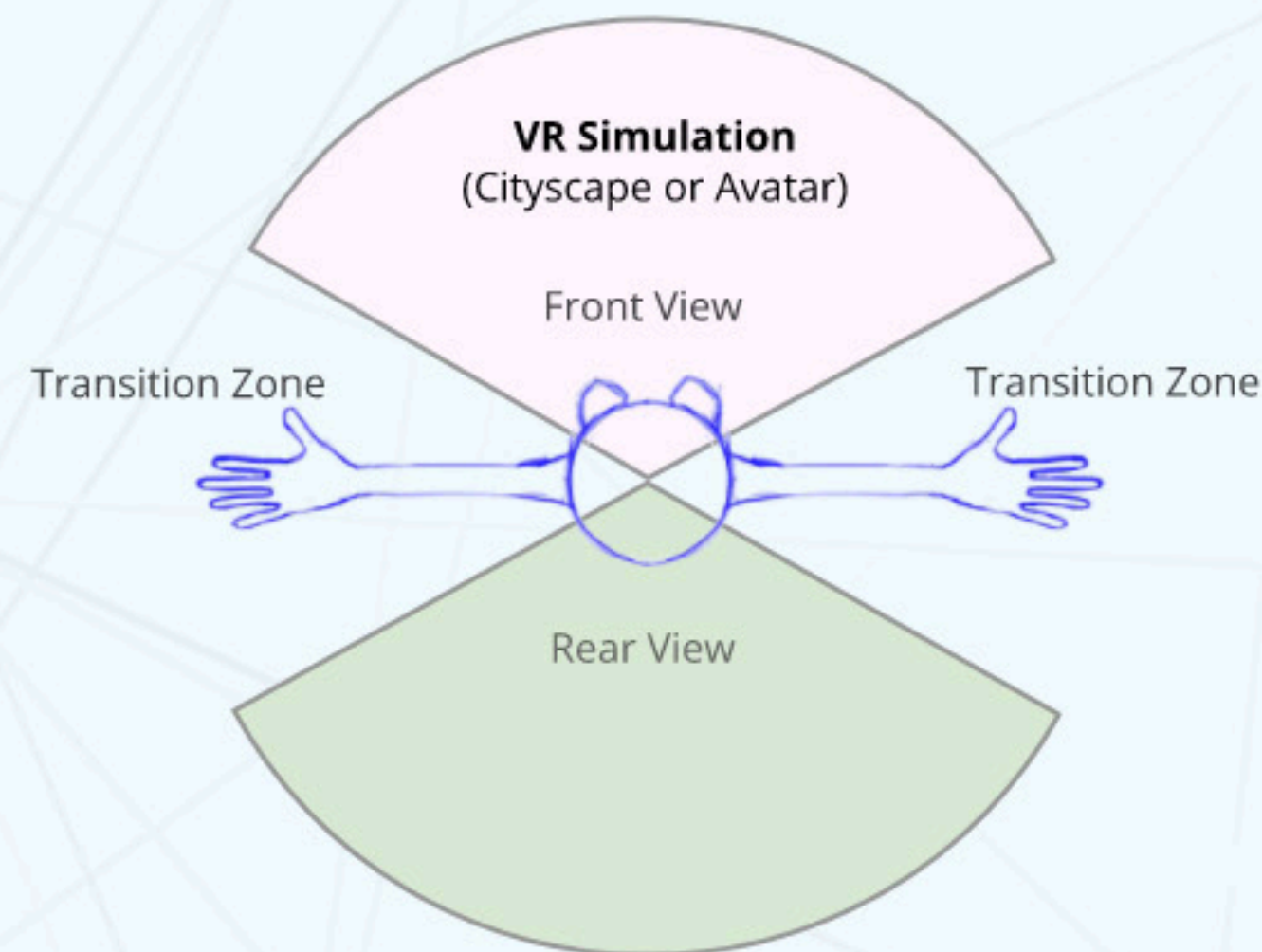
Copyright 2016-2018 © Seong-Jik KIM

User Interface

The 1st.POV + The 3rd.POV

3D space moving position view

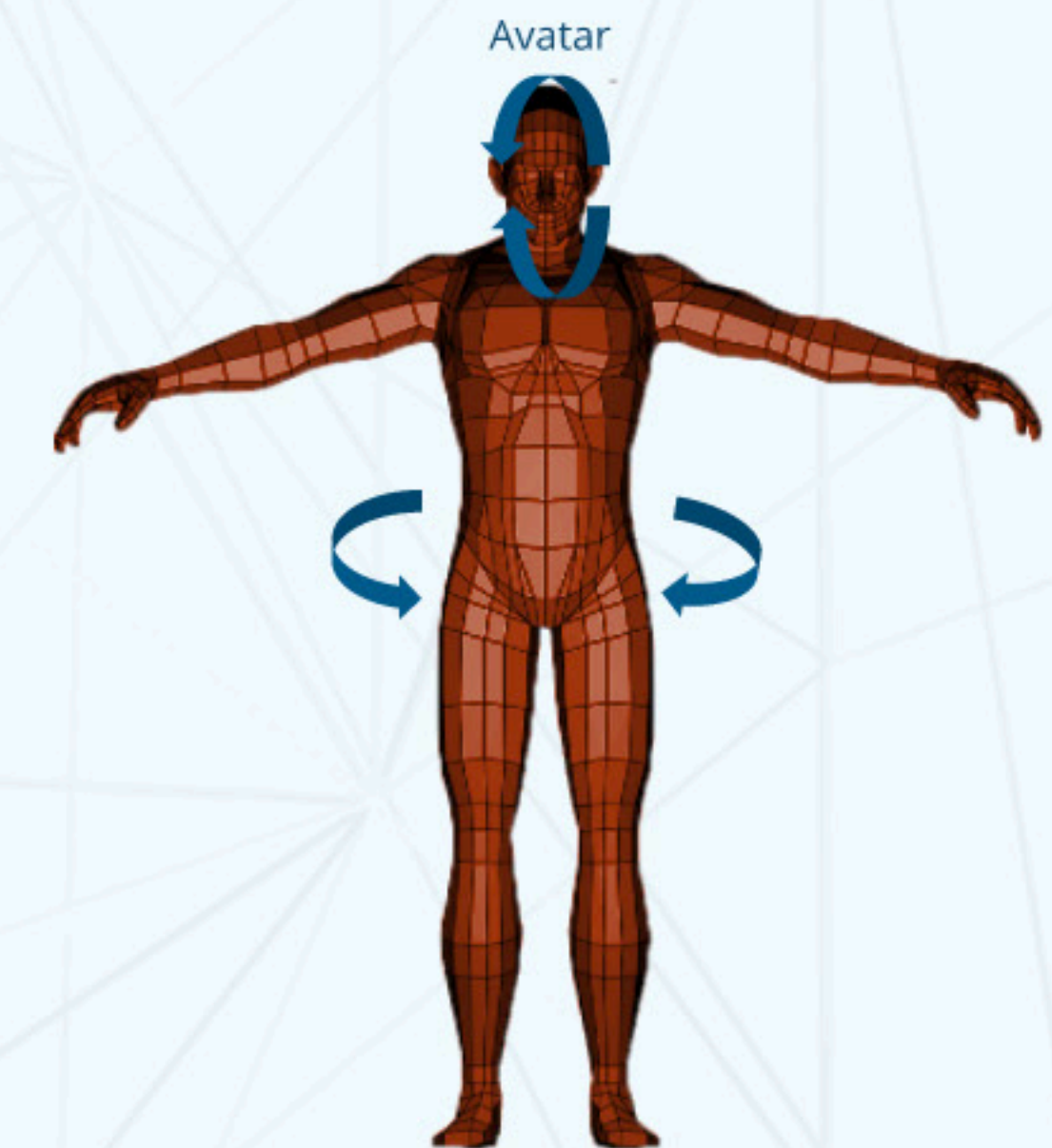
Simulation in a city with three options



Body Control (vice-versa)

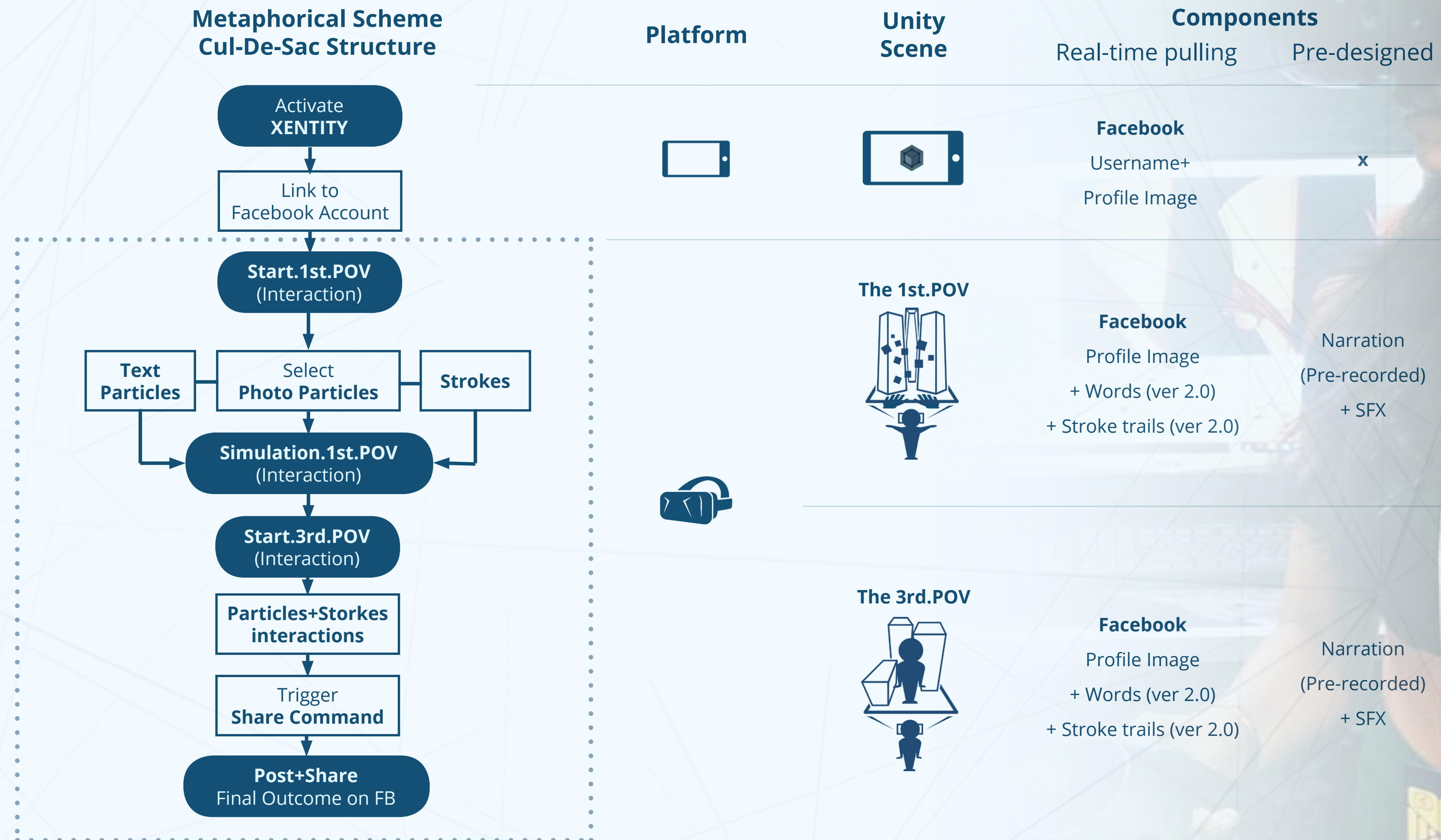
3D space fixed position view

After Interaction with avatar,
post a snapshot to Facebook timeline



Information Architecture

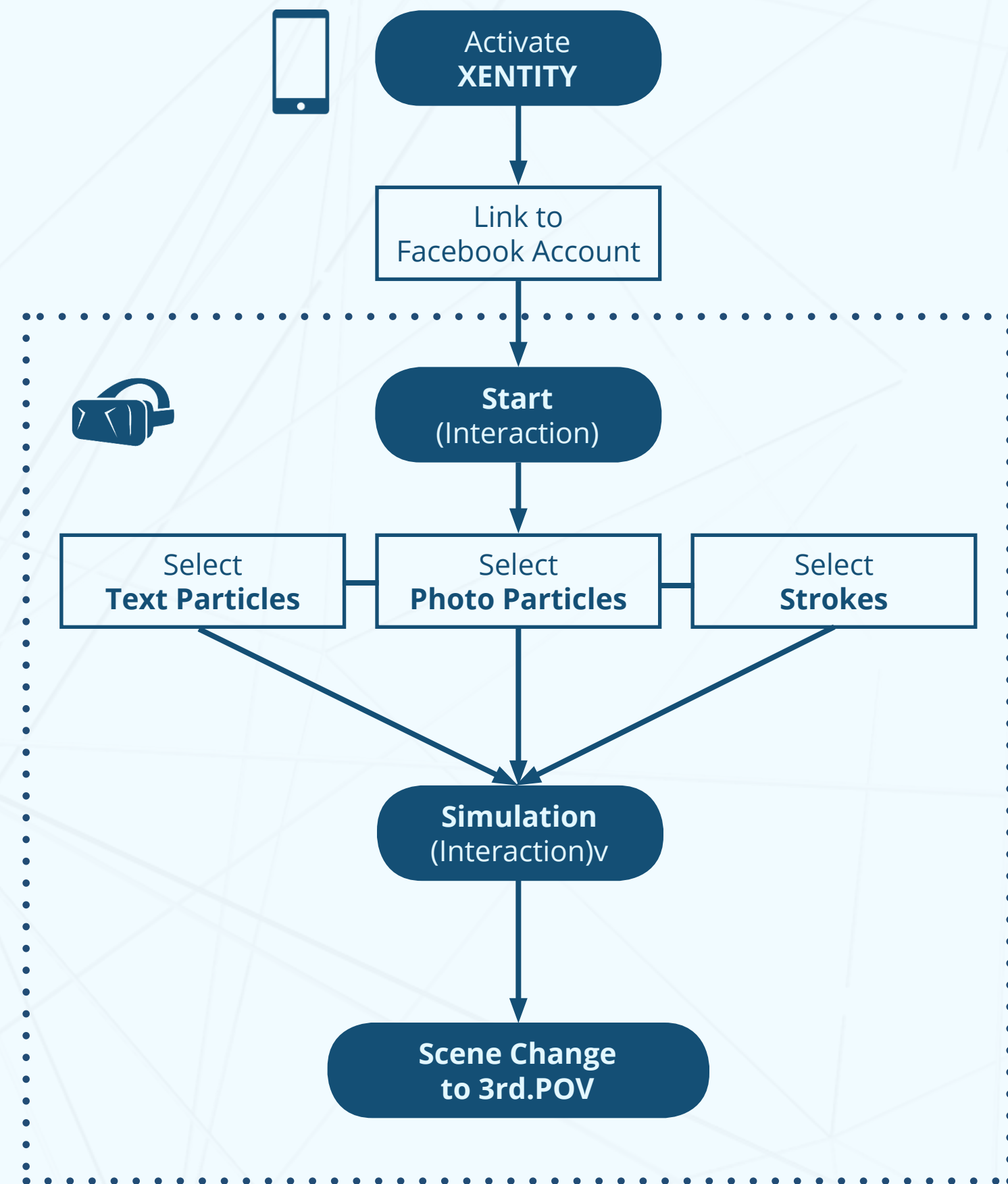
Alongside UX flows



User Flow I

VR interaction with a cityscape
in a first person point of view

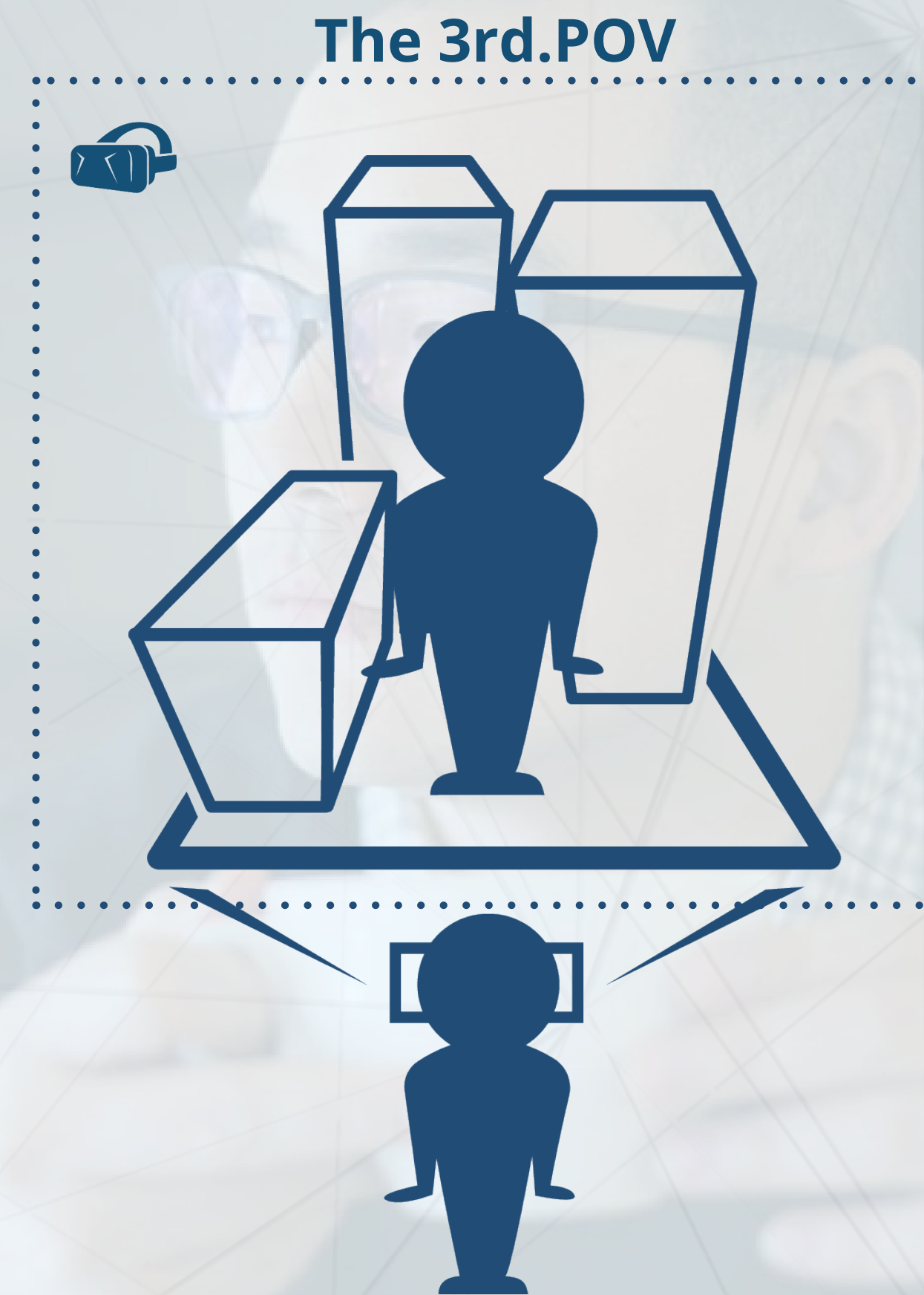
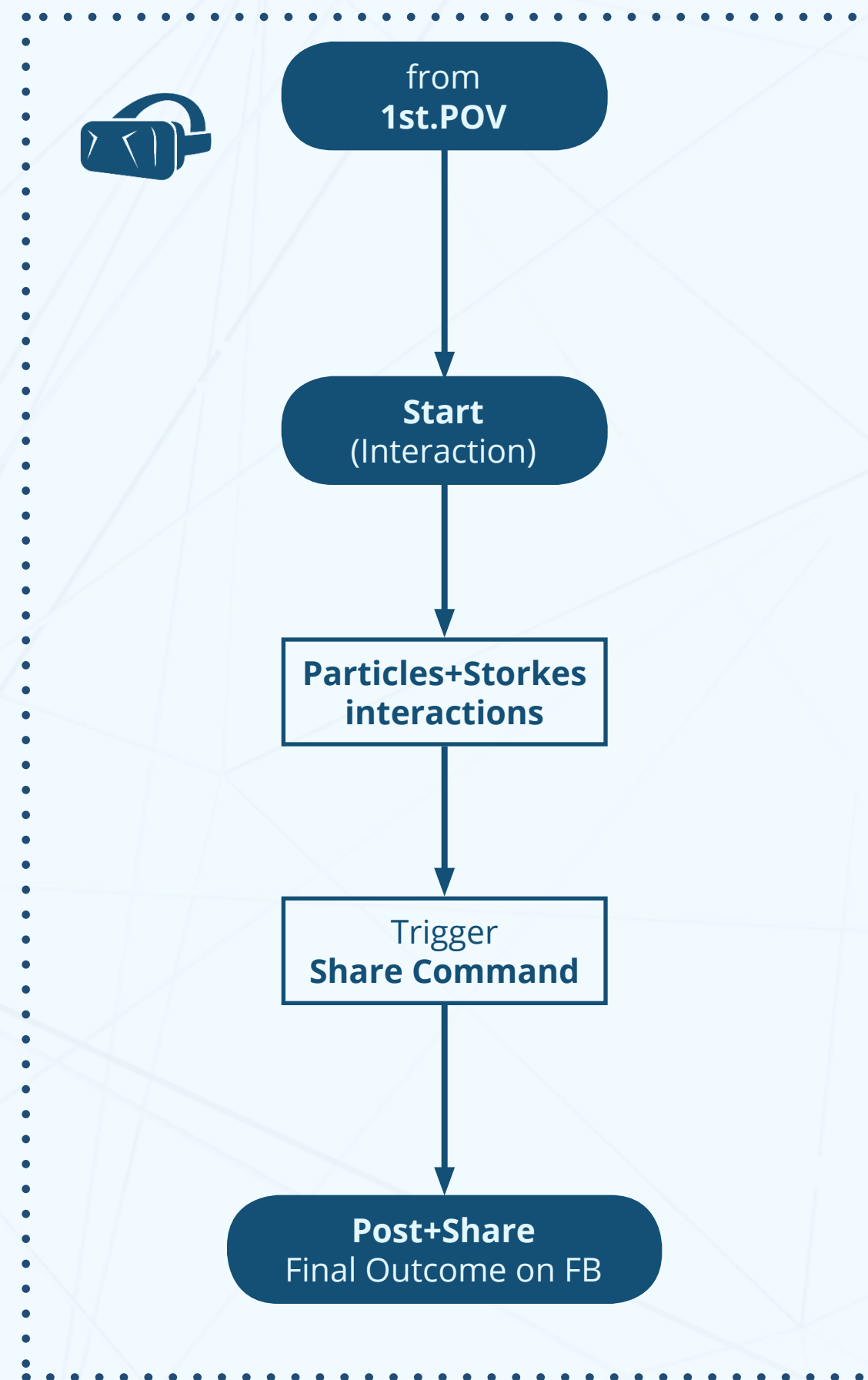
Primary



User Flow II

VR interaction with an avatar
and sharing a scene on Facebook

Secondary

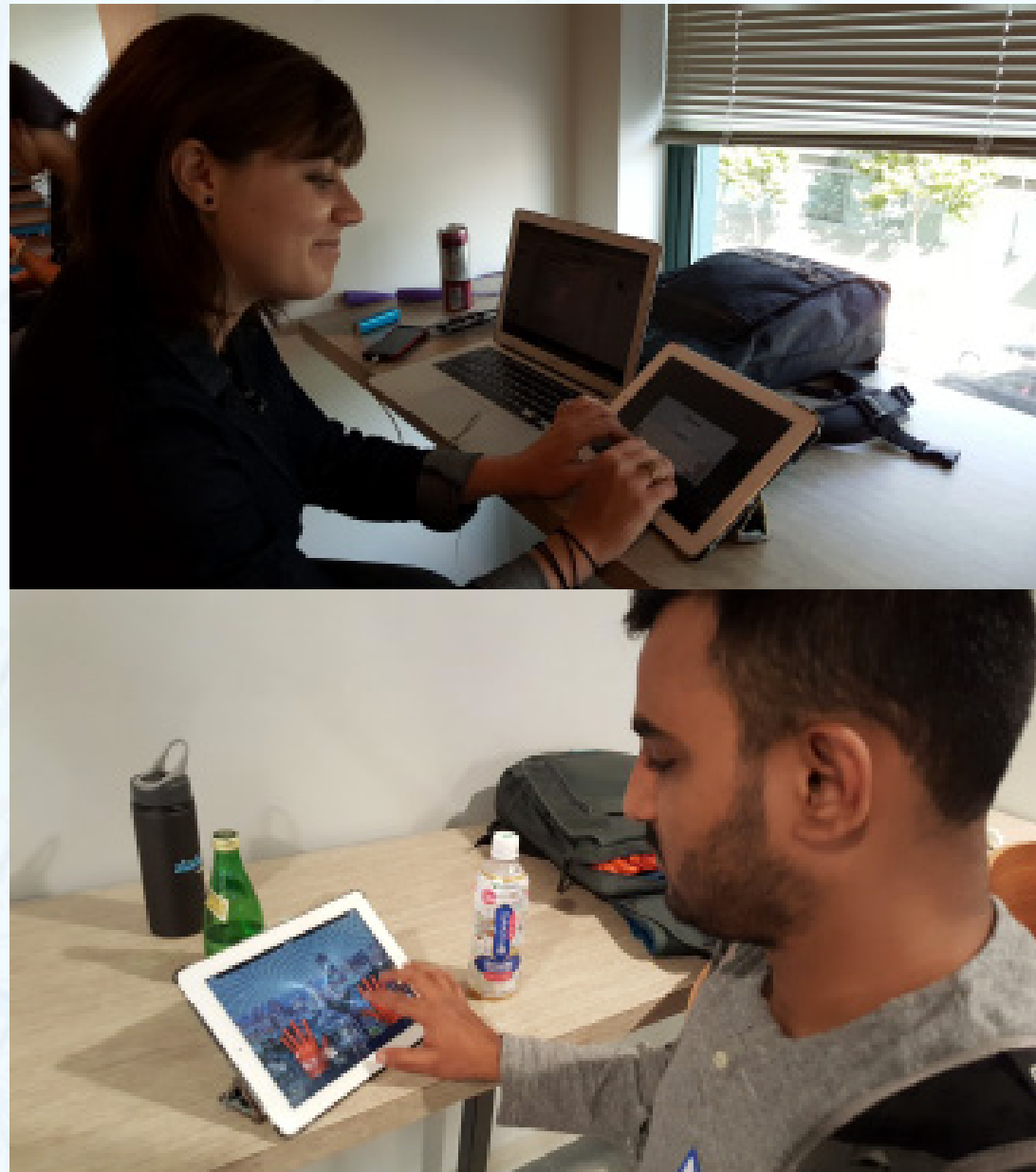


Usability Test

To find ambiguity of UX + Improve concept and task flows

► [InVision Prototype Link](#)

► [Task Sheet Link](#)



Kim Covey (upper) + **Ketan Rajput** (lower)
@ Udemy HQ, SF (Jul 26, 2016)

Face-to-face 3 samples + Online 4 samples (Jul26 - 30,2016)

► [Test Response Form Link](#)

► [Testers Answers Sheet Link](#)

Face-to-Face Test is much better than online test.

(I am still waiting for my real target audiences' and face-to-face testers' responses.)

According to the results of Task2 and Task3, I am going to **adopt Gamepad interface for Task2** in order to make interaction more convenient.

Task2 and Task3 should be much more clearly visualized even if it is just a prototype.

I am supposed to make much more **intuitively comprehensible proof of concept.**

If I could not make a motion graphics prototype or a proof of concept until the end of this semester, I will add some more visual images for describing VR simulation phase.

Ultimately, **The rest of UX improvement will be to make a real visualization by using Unity.**

Prototype Test Script

Scenario and Task

Interaction with Citiycape

Scenario 1

You are a participant in an artistic VR showcase who has a facebook account. You've wanted to try non-gaming VR experience and get inspiration from it. Since you are a visual storyteller with your own skills and aesthetics, you will realize author's intention or your own interpretation.

Now you are going to login Xentity with your own facebook username and password, then, try interactive VR experience.

Taks1

- Activate Xentity VR app to log in to your Facebook account.
- You would like to be immersed in a virtual cityscape
- Enjoy interaction with watching some interesting visual effects.

Share VR Experience

Scenario2

You are a participant in an artistic VR showcase who has a facebook account. You are a semi-professional photographer and have posted over 30 photos to Facebook. Additionally, you've ever enjoyed only 360 VR videos, so this is your first chance to try to wear a head-mounted display for enjoying compute- generated VR contents. You are a little excited but really want to enjoy an interesting omnidirectional immersive VR. During VR experience, a demo staff guides you what you can do in VR and you will have your own experience by sharing feature on Facebook.

Now you are going to log in Xentity with your own Facebook username and password, then, try interactive VR experience.

Taks2

- Activate Xentity VR app to log in to your Facebook account.
- You've just finished interactive VR experience in the 3rd.POV, "Avatar" mode,
- Then, you will post a moment in Xentity VR on your Facebook timeline.



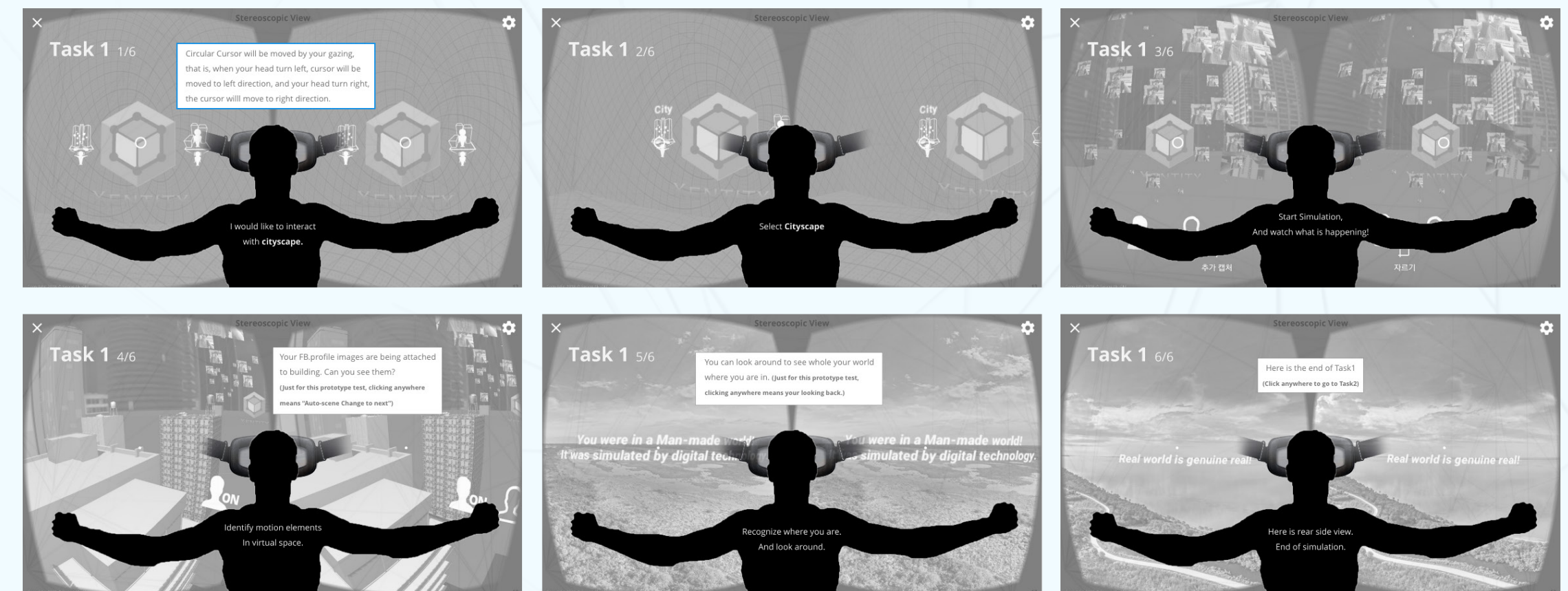
Paper Prototype

Wireframe

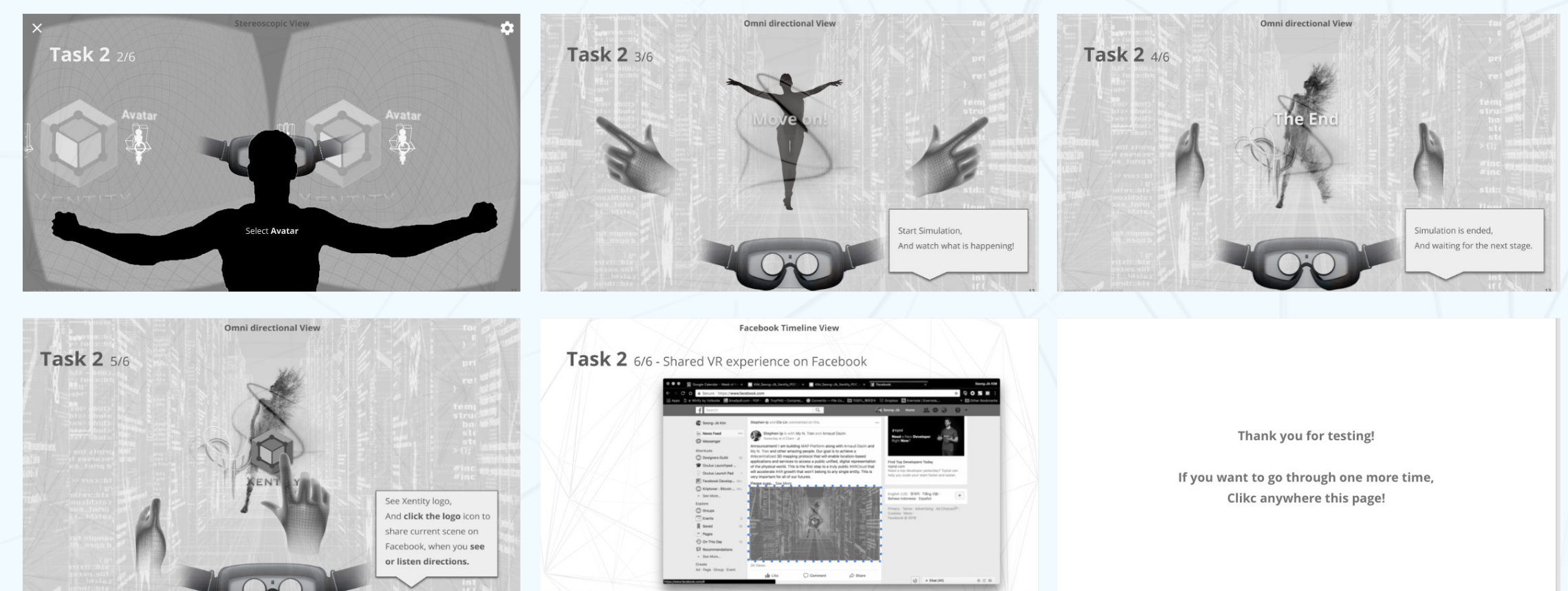
► Adobe Xd Prototype Link

► Task Sheet Link

Task1



Task2

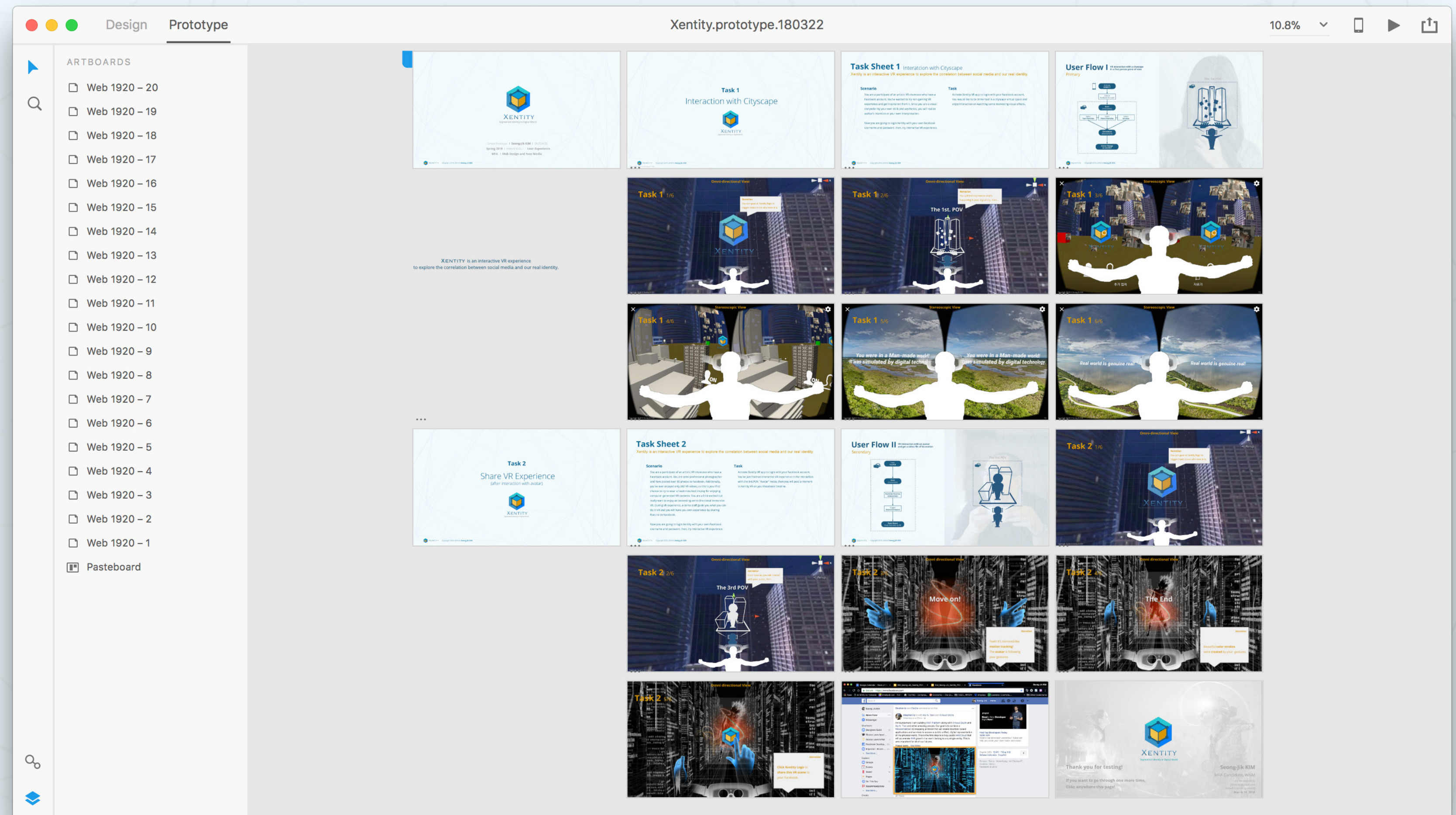


Online Prototype

Hi-Fi Mockup + Adobe Xd

► Adobe Xd Prototype Link

► Task Sheet Link

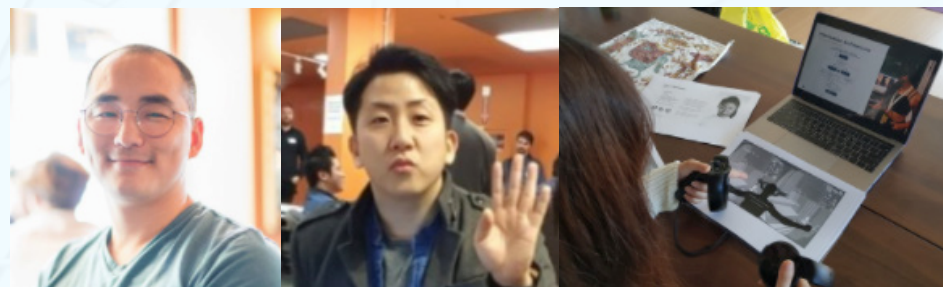


Prototype Test Results

Feedbacks

1st Round

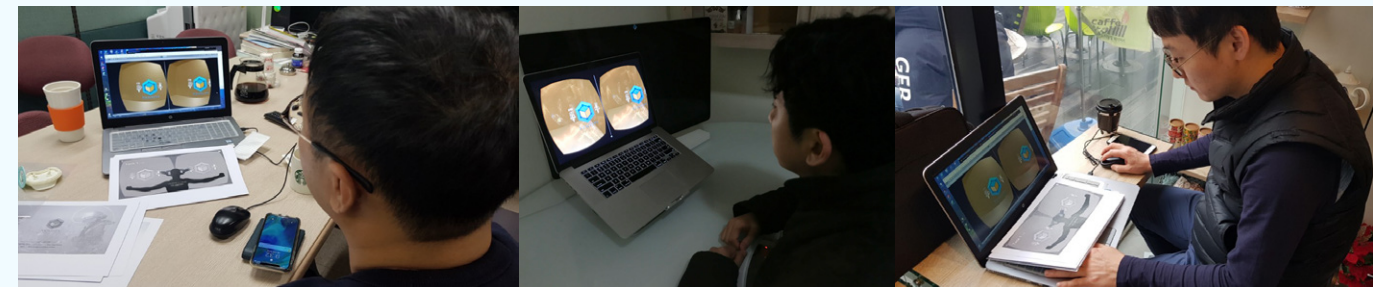
[Result Link](#)



- **February 16~17, 2018**
- A more detailed guide is needed at every stage.
- Interactive indicators can help me to know what I do next.
- Comprehensible tutorials could be helpful.
- I do not know well about VR. a paper prototype is a little difficult for me.

2nd Round

[Result Link](#)

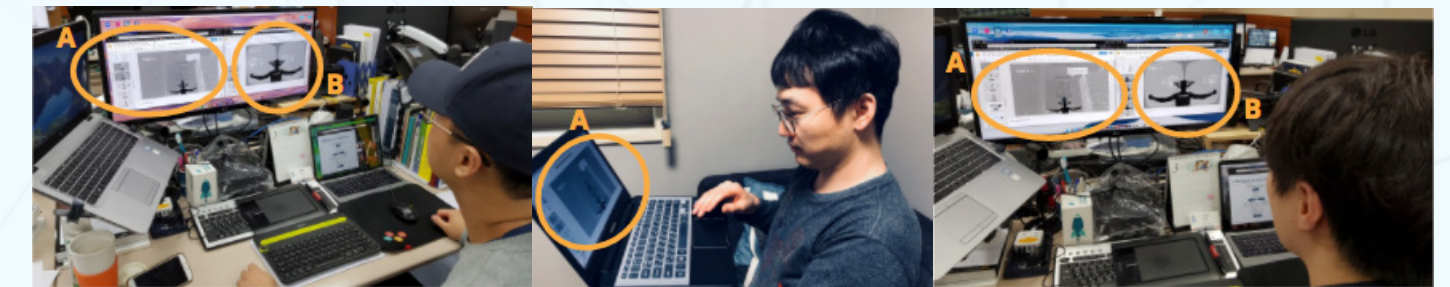


- **February 23, 2018**
- Consistent use of Xentity logo should be explained before starting VR sequence.
- A simple cascade structure is a better fit for your concept.
- The naming of options sounds like mismatched in contrast.
- A moving tutorial is still needed.
- How about do you add audio narrations for guidance?

3rd Round

A/B Test

[Result Link](#)



- **March 2, 2018**
- **A** - improved version vs. **B** - previous version
- Only one flow structure (A) is better.
- Simpler UI elements decrease users' misconception.
- GIF animated icons are a little more focused by my eyes.

Conclusions

Improvements by test results | Feb 16~Mar 3, 2018

1_{st}

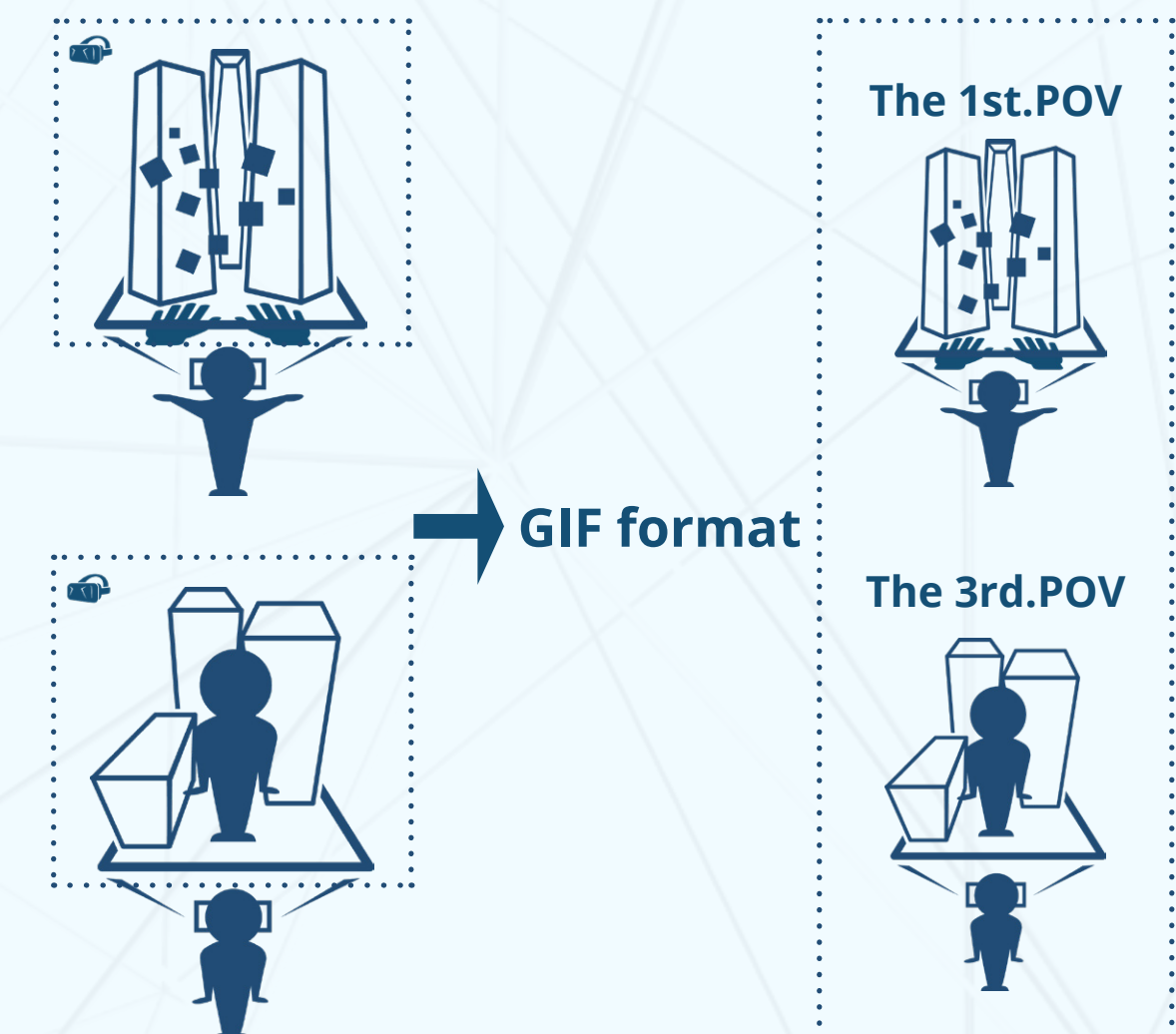
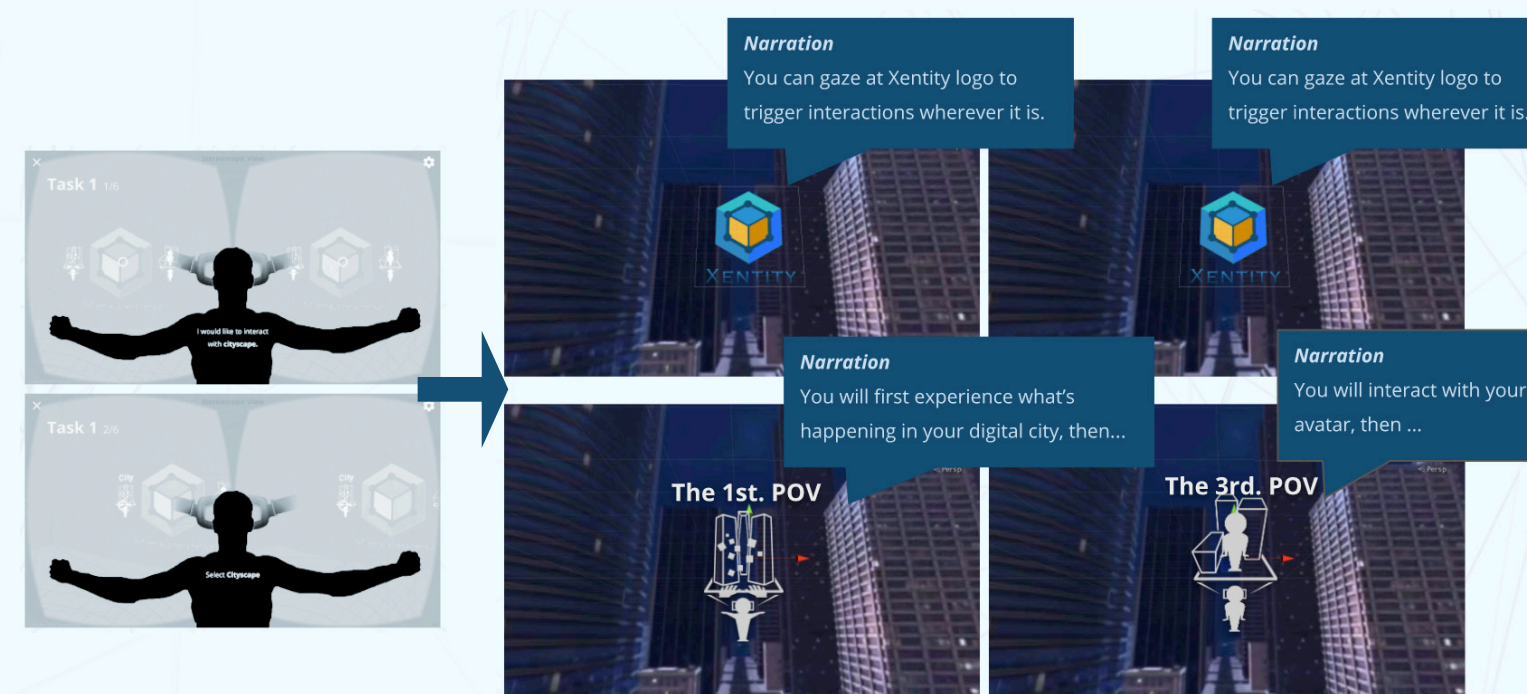
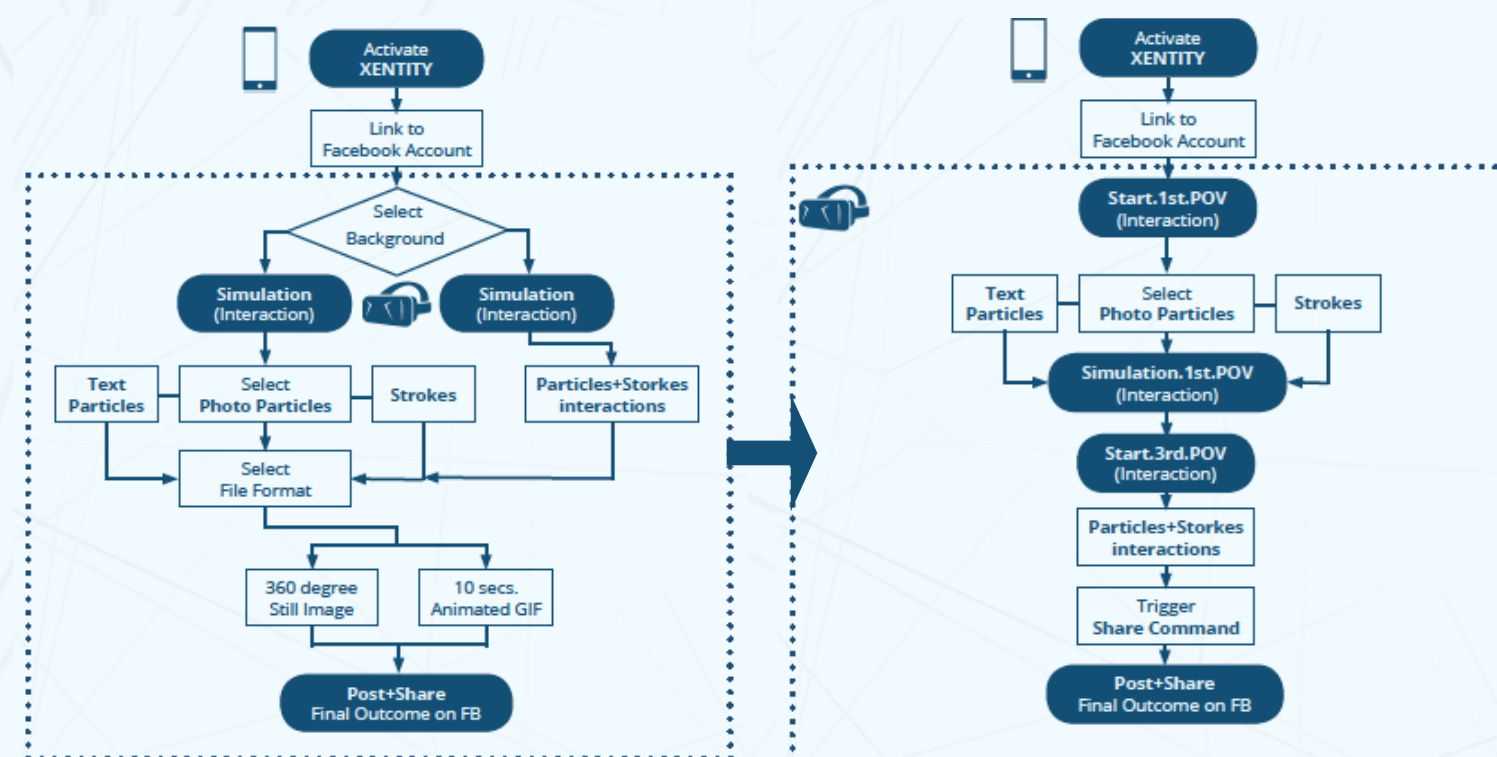
- Change IA from parallel to serial structure
- City or Avatar → the 1_{st} POV -- the 3_{rd} POV

2_{nd}

- Put a simple tutorial in login stage by animation
- Add narration to guide VR experience

3_{rd}

- After entering VR mode, a guide could be added
- Use GIF icon instead of a still image



Visual Design

Chapter 4

4

Moodboard	45
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Visual Design	48
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Moodboard I

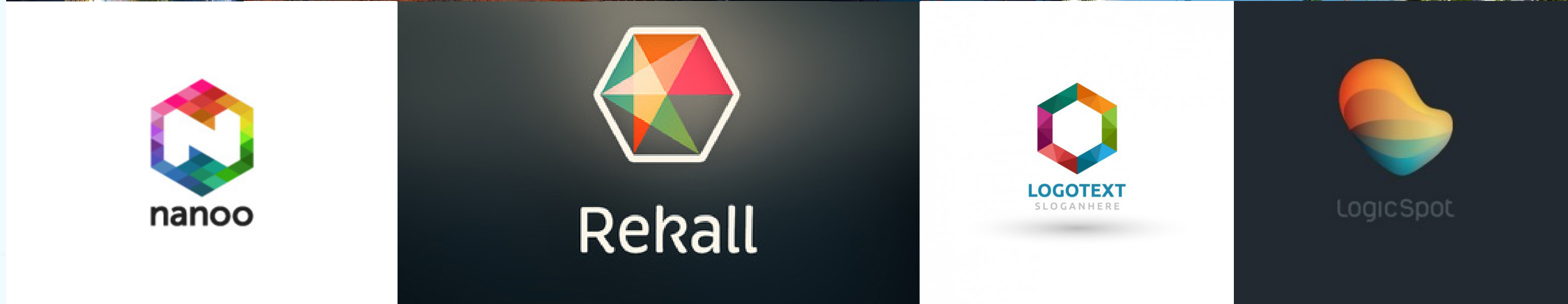
Colors + Logo Design

Cityscape + Nature

Sky + Lights

Cube shape (or Hexagonal)

Layered Colors



Visual Elements + Style

Cityscape + Upside down

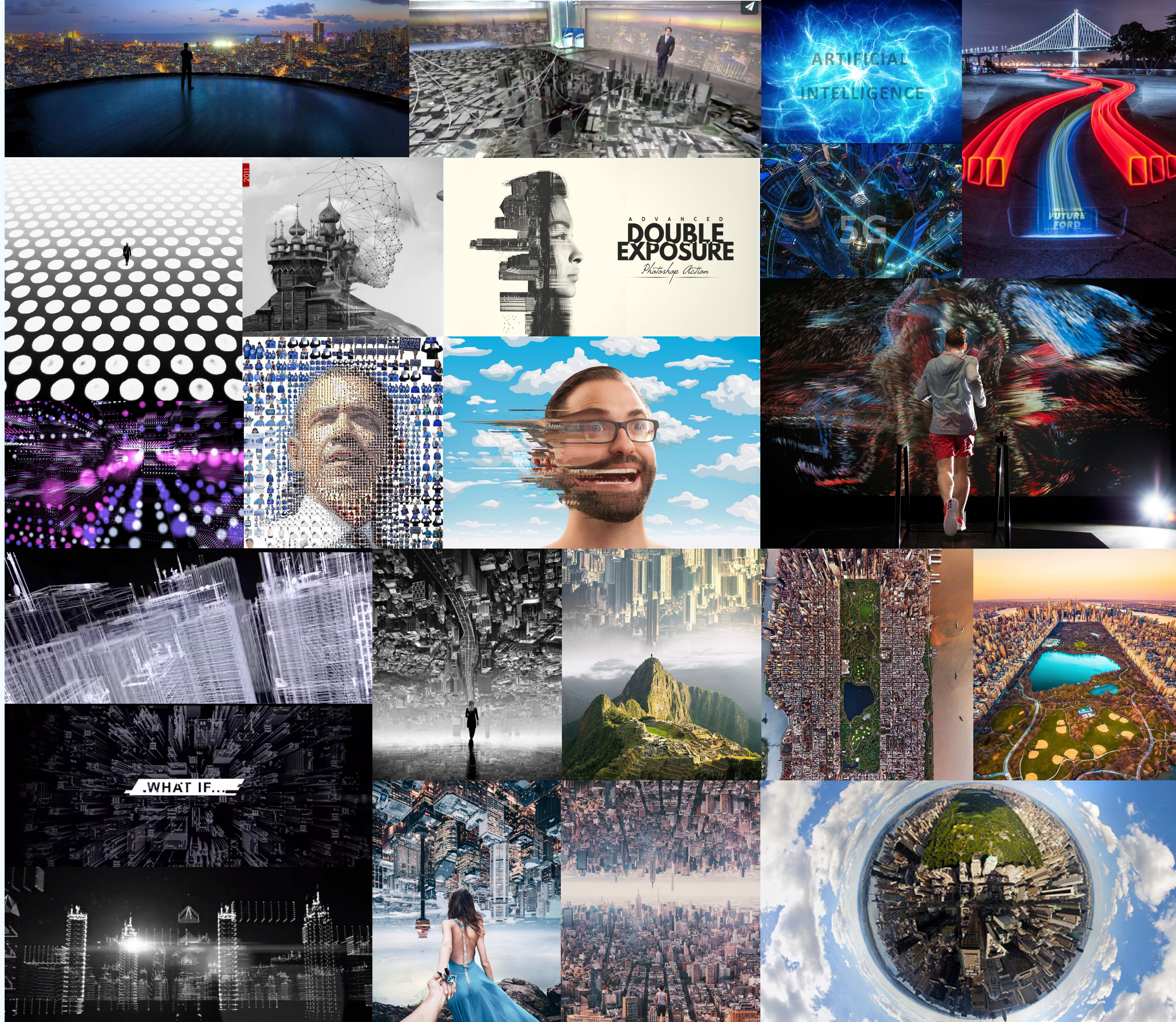
VR/AR visualization

Pointillism

Double exposure image

Strokes

Digital look texture



XENTITY

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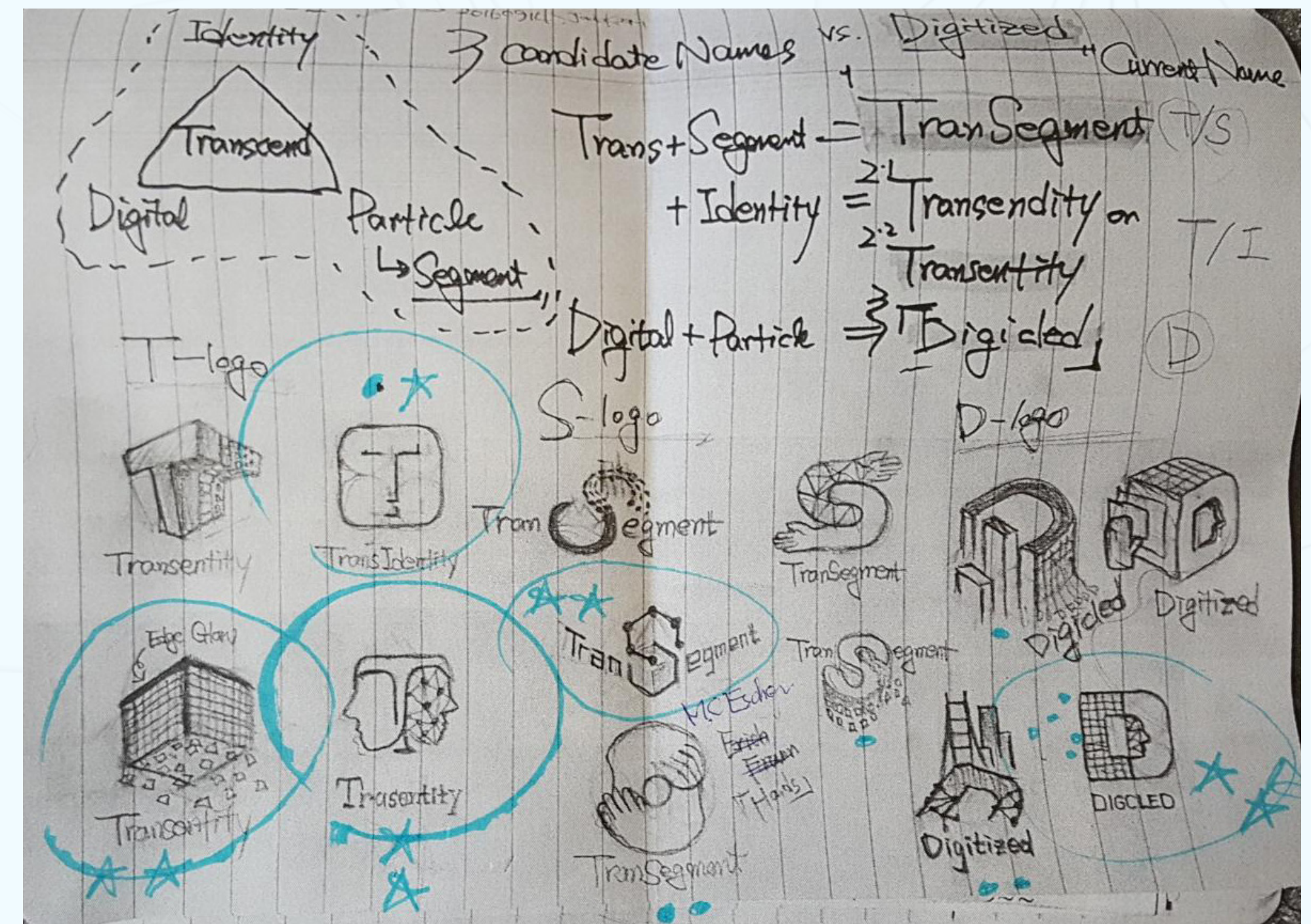
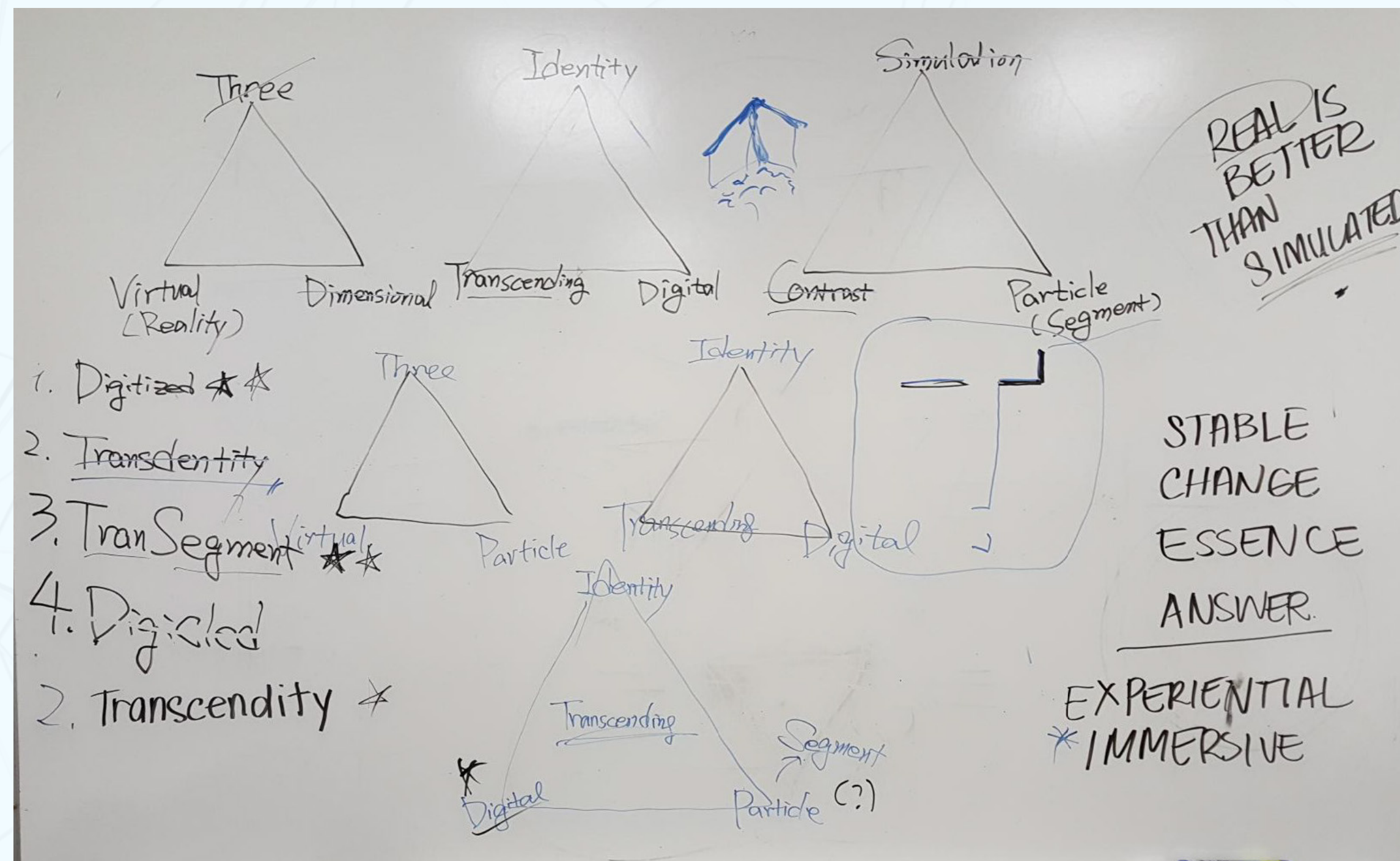
Visual Metaphor

Components of simulation

- **Beautiful Nature**
Don't forget the genuine world. Plus, nature means the essence of existence.
- **Simulated VR Cityscape**
The simulated world has surrounded us.
- **Profile Image**
Digitized Identity by Big Data by Social Media Posting
- **Segmented Elements**
All doings influence on the world and are connected to each other.



Ideation - Brand name and Logo sketch



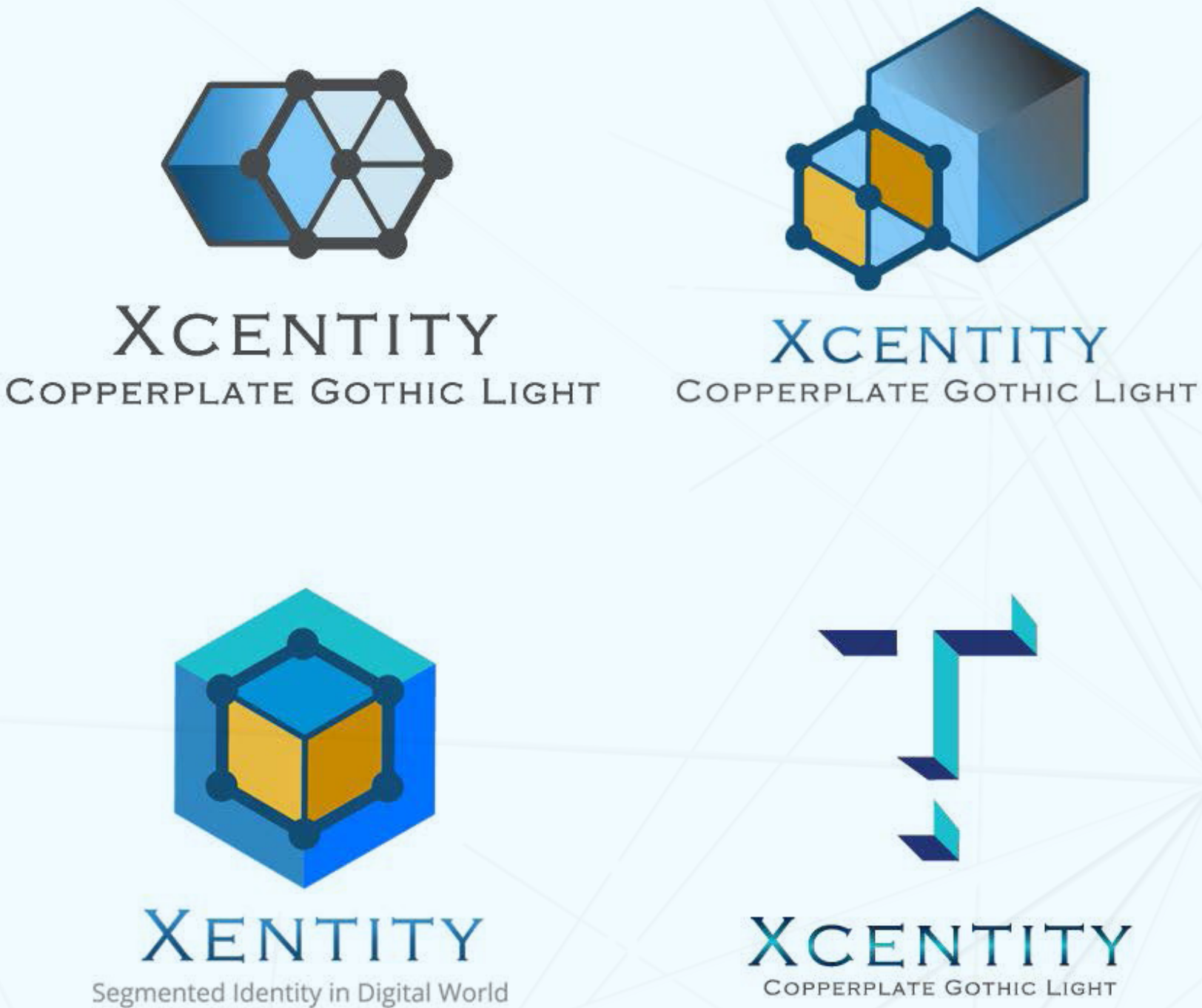
Visual Design

Progress - Logo design

1st Desgin



2nd Desgin



Visual Design

Branding - Final design

Naming

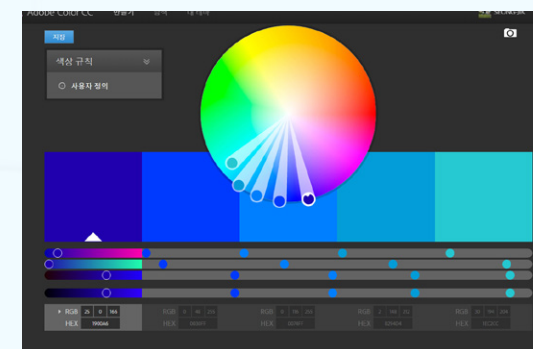
- **Transcentity** = Transcend + Identity
- **X-scentity** : **X-** is the abbreviation of '**Trans**'
- The 2nd meaning of **X-** : **Cross**
(**Cross-identity** between reality and simulation)
- The 3rd meaning : **Cross (X-) + Entity**

Font

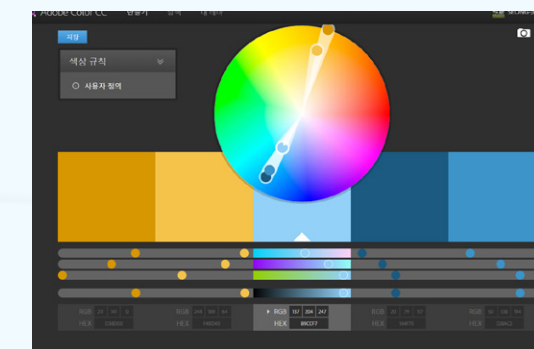
COPPERPLATE GOTHIC LIGHT
COPPERPLATE GOTHIC REGULAR

Open Sans Light Open Sans Light
Open Sans Regular Open Sans Regular
Open Sans Bold **Open Sans Bold**

Color



Intellectual
(Communication / Logic)



Emotional
(Friendly / Creative)



XENTITY

Segmented Identity in Digital World

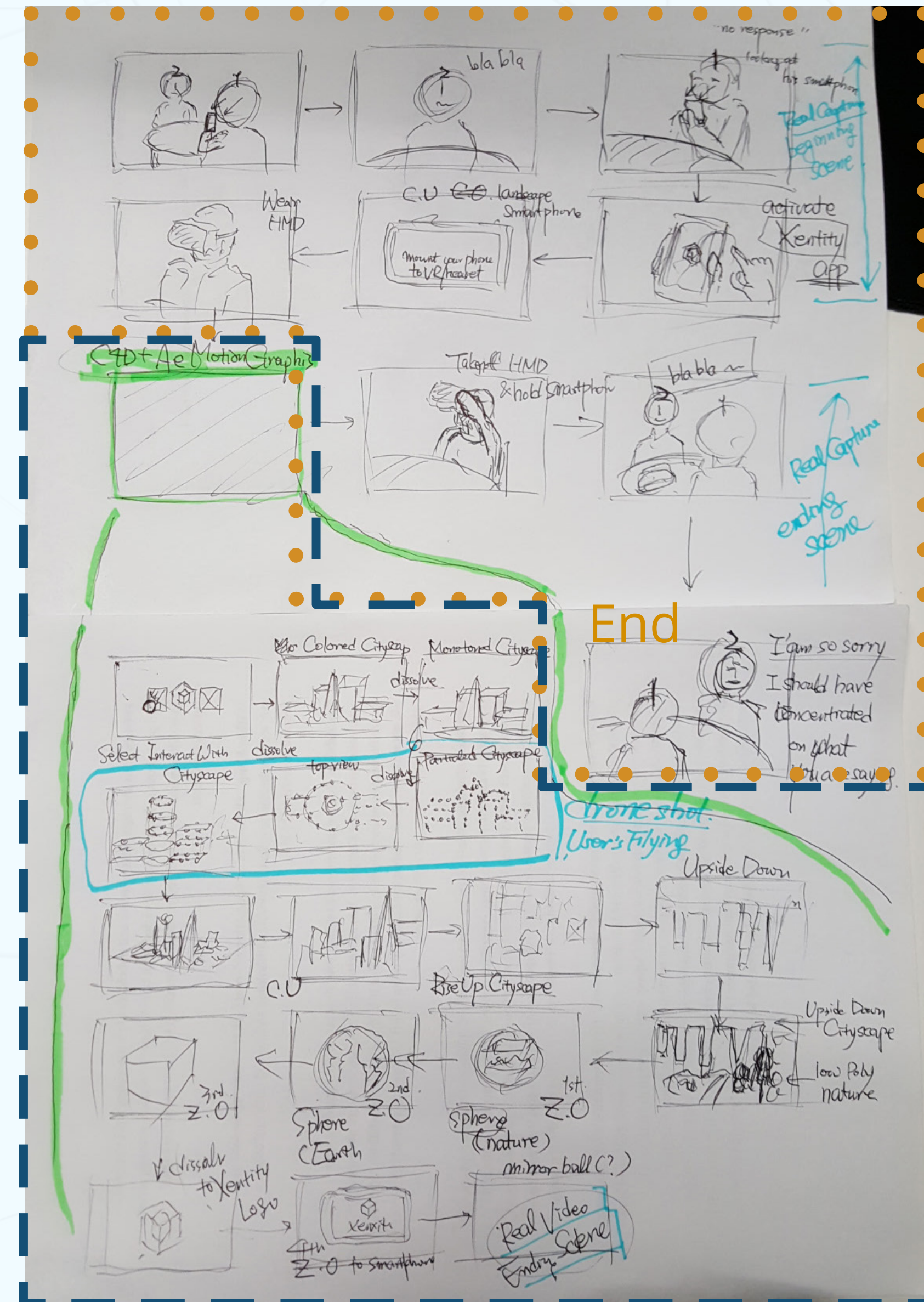


3D Design

Storyboard for the concept video

Camera Shooting

Motion Graphics

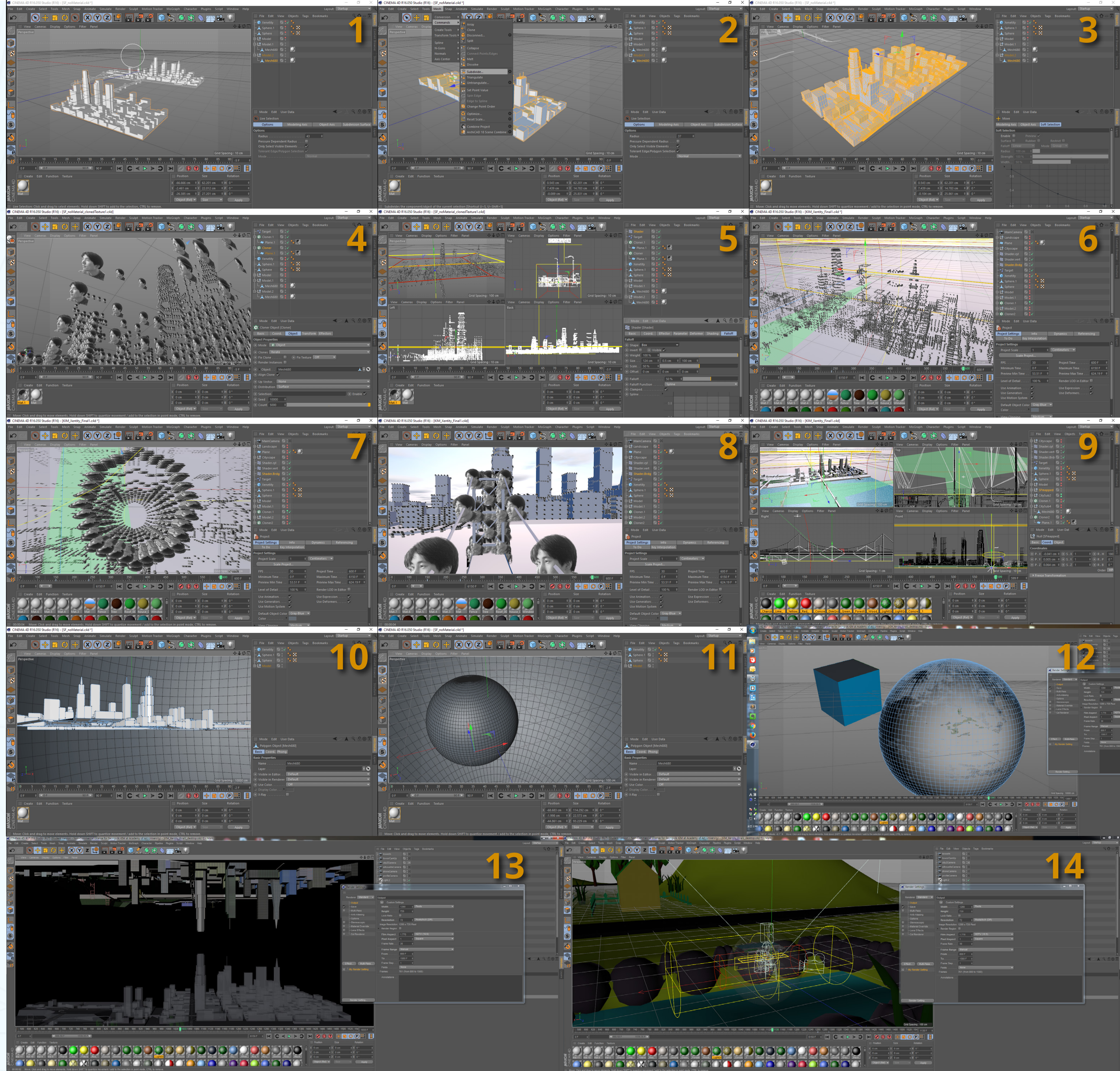


3D Design

Modeling + Animation

Cinema 4D process

- 1 Modeling
- 2 **Subdivide** polygons
- 3 Divided each polygon into two pieces
 - Segment Meshes to attach profile images
- 4 **MoGraph - Cloner - Target** Effector
 - Attaching profile images to each vertex
- 5 **MoGraph - Shader** Effector
 - Add masks to make the animation of revealing image attached cityscape
- 6-8 **Edit Keyframes** of Camera movement
- 9 **Mapping** textures
- 10-12 **Edit Keyframes** for animation of conceptual structure
- 13-14 **Rendering**
 - 1280 x 720, 72 pixels/inch
 - 16:9 HDTV, squared pixel, 30 fps



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Technical Process

Chapter 5

5

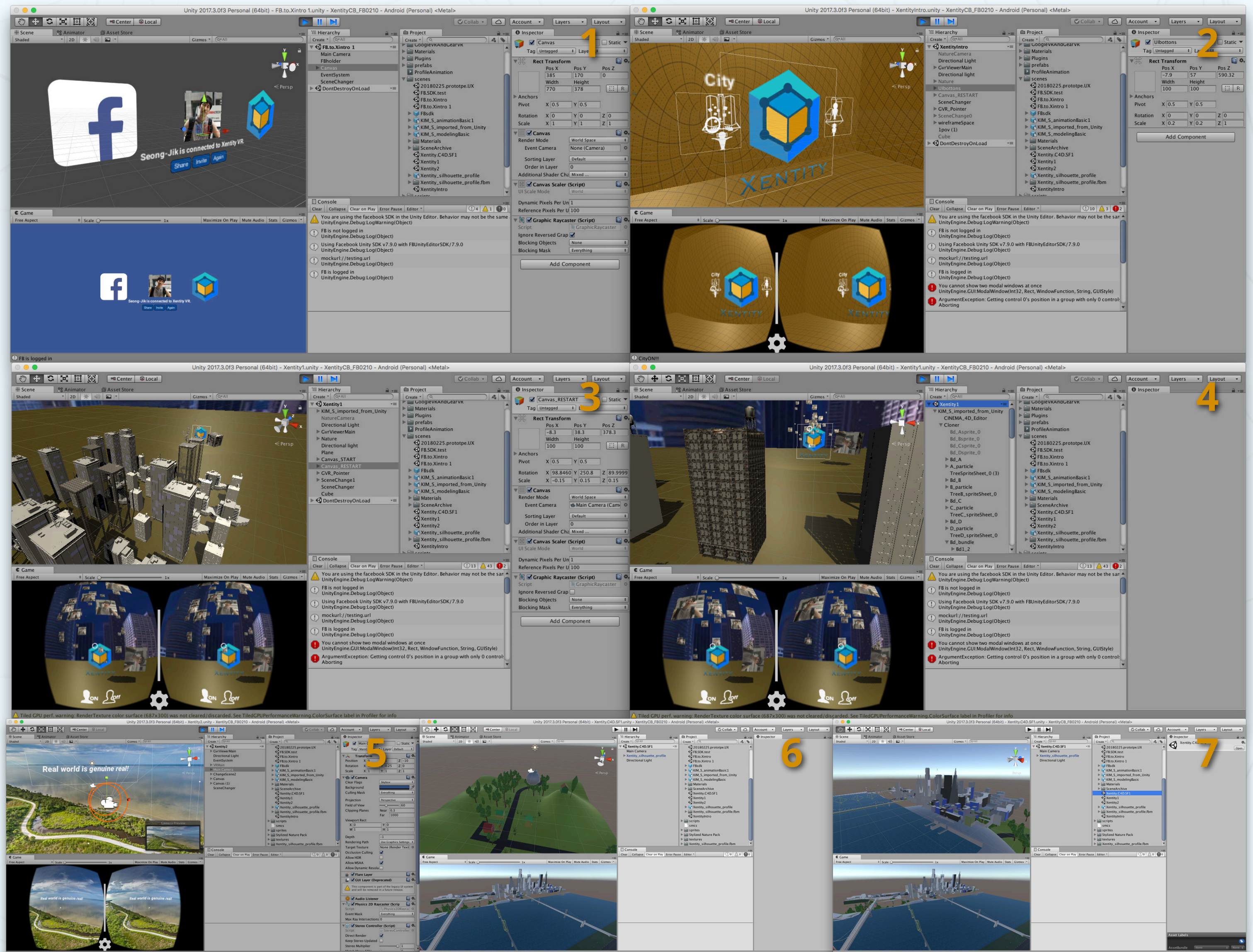
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VR/AR Develop	55
C# Scripting	56
Screenshots	57
Dev.envirionment	58
Tech.Block Diagram	59

VR Develop

Unity 3D ver.5.6.0f3 (64bit)

VR scene design + edition

- 1 **Intro + Outro** scene (Android phone view)
 - Facebook connection
 - Share, Invite, and Again buttons
- 2 **Selection** scene (1st.scene after entry in VR)
- 3 **Cityscape** scene (Android Cardboard view)
 - User's profile image particle
- 4 User's **profile image mapped building**
 - Real-time access Facebook DB by **Graph API**
 - **Facebook SDK for Unity** ver.7.9
- 5 **Nature** scene
 - used **Skybox** material by 360-degree image
- 6 **Cinema4D generated scene** import (in progress)
 - Cinema 4D R16.021used
- 7 Perspective Camera view in Unity Editor
 - imported FBX format file which exported from **Cinema 4D** (in progress)



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VR/AR Develop

Technical achievements

* Cardboard VR scene updates

- 1 Cloned city scene added
- 2 Profile image particles in the cloned city
- 3 Mapped profile images on meshes of buildings by **MeshTextures.cs** scripts

* Oculus Rift Teleport updated

- 4 Cinema 4D created SF city scene is loaded
- 5-6 Teleport user interface test in Unity player mode

* AR experiement and screenshot feature (Vuforia SDK)

- 7 3D terrain is attached to my smartphone in Unity player mode.
- 8 Captured screenshot by clicking the gray button in #7 player mode



C# scripting

MS Visual Studio 2015

Facebook SDK integration

1 FacebookManager.cs

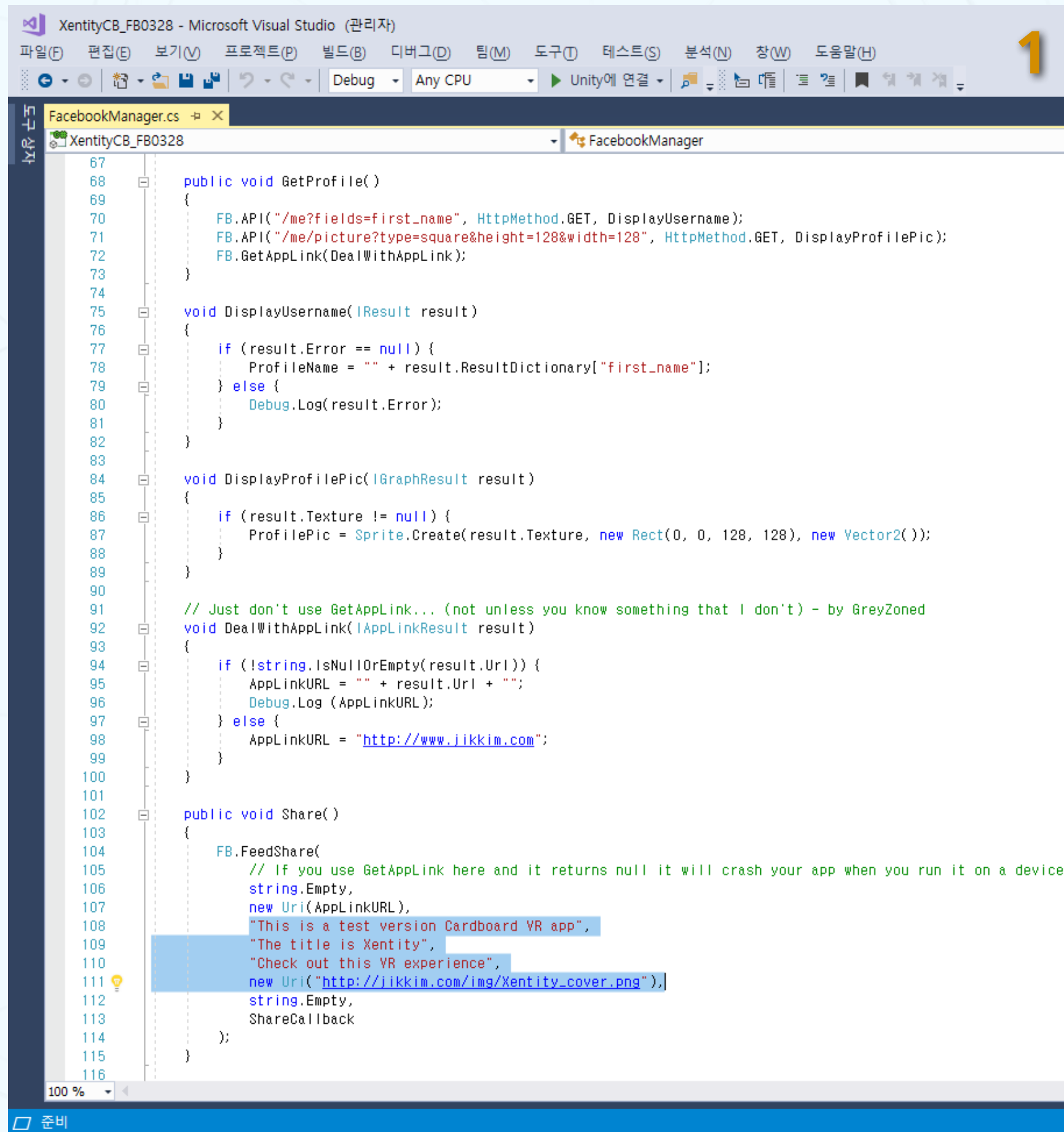
- This C# scripts execute **Login**, call **ProfileName** and **ProfilePic**.
- contains **DisplayProfilePic()** to pull user's image into Unity scene
- **Share()** and **Invite()** are also included.

2 FBScript.cs

- This C# scripts call FacebookManager.cs to control **Login**, **display user data**
- call **share/invite functions**

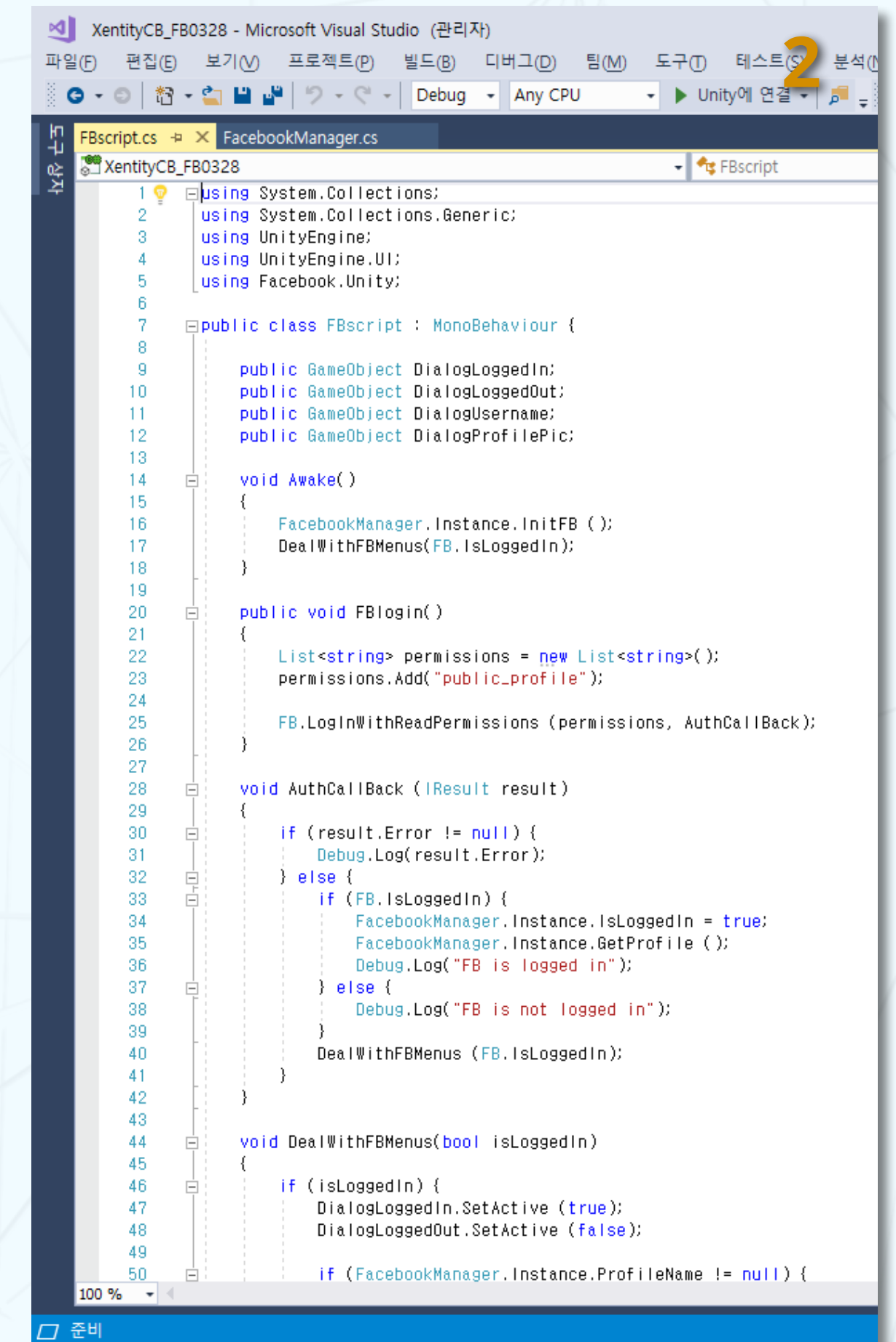
* Facebook SDK for Unity Link

<https://developers.facebook.com/docs/unity/>



1

```
67 public void GetProfile()
68 {
69     FB.API("/me?fields=first_name", HttpMethod.GET, DisplayUsername);
70     FB.API("/me/picture?type=square&height=128&width=128", HttpMethod.GET, DisplayProfilePic);
71     FB.GetAppLink(DealWithAppLink);
72 }
73
74 void DisplayUsername(IResult result)
75 {
76     if (result.Error == null) {
77         ProfileName = "" + result.ResultDictionary["first_name"];
78     } else {
79         Debug.Log(result.Error);
80     }
81 }
82
83 void DisplayProfilePic(IGraphResult result)
84 {
85     if (result.Texture != null) {
86         ProfilePic = Sprite.Create(result.Texture, new Rect(0, 0, 128, 128), new Vector2());
87     }
88 }
89
90 // Just don't use GetAppLink... (not unless you know something that I don't) - by GreyZoned
91 void DealWithAppLink(IAppLinkResult result)
92 {
93     if (!string.IsNullOrEmpty(result.Uri)) {
94         AppLinkURL = "" + result.Uri + "";
95         Debug.Log(AppLinkURL);
96     } else {
97         AppLinkURL = "http://www.jikkim.com";
98     }
99 }
100
101 public void Share()
102 {
103     FB.FeedShare(
104         // If you use GetAppLink here and it returns null it will crash your app when you run it on a device
105         string.Empty,
106         new Uri(AppLinkURL),
107         "This is a test version Cardboard VR app",
108         "The title is Xentity",
109         "Check out this VR experience",
110         new Uri("http://jikkim.com/img/Xentity-cover.png"),
111         string.Empty,
112         ShareCallback
113     );
114 }
115
116 }
```



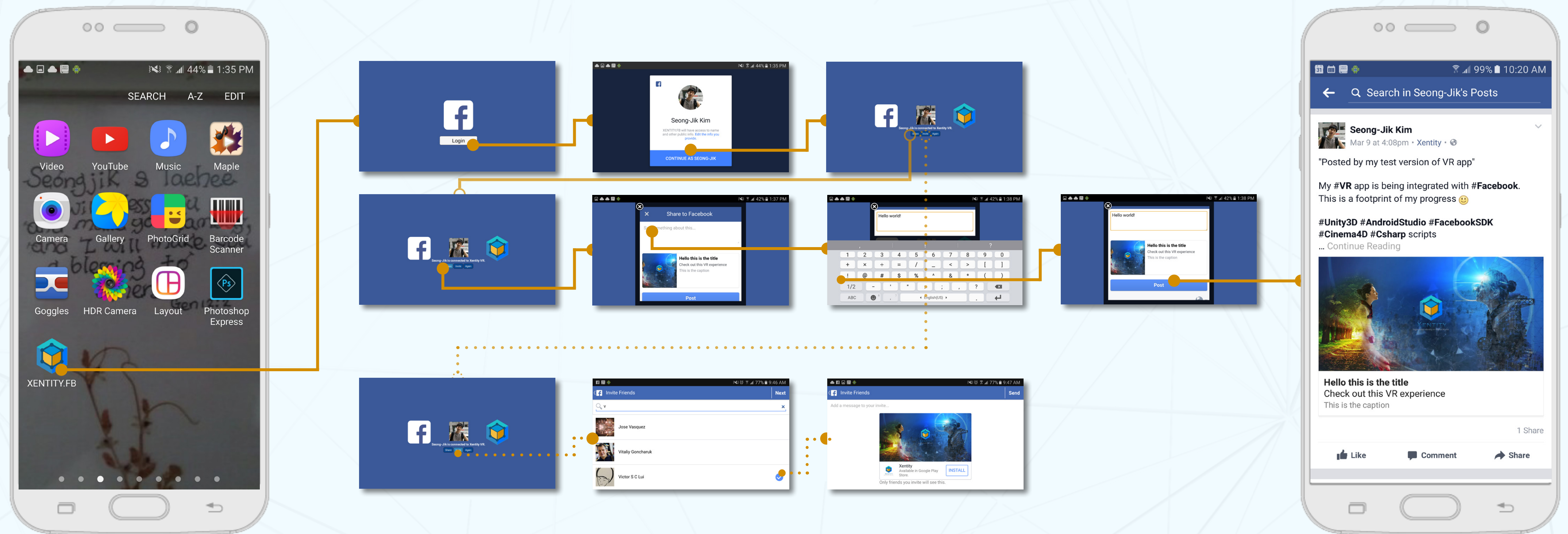
2

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4 using UnityEngine.UI;
5 using Facebook.Unity;
6
7 public class FBScript : MonoBehaviour {
8
9     public GameObject DialogLoggedIn;
10    public GameObject DialogLoggedOut;
11    public GameObject DialogUsername;
12    public GameObject DialogProfilePic;
13
14    void Awake()
15    {
16        FacebookManager.Instance.InitFB();
17        DealWithFBMenus(FB.IsLoggedIn);
18    }
19
20    public void FBLogin()
21    {
22        List<string> permissions = new List<string>();
23        permissions.Add("public_profile");
24        FB.LoginWithReadPermissions(permissions, AuthCallback);
25    }
26
27    void AuthCallback(IResult result)
28    {
29        if (result.Error != null) {
30            Debug.Log(result.Error);
31        } else {
32            if (FB.IsLoggedIn) {
33                FacebookManager.Instance.IsLoggedIn = true;
34                FacebookManager.Instance.GetProfile();
35                Debug.Log("FB is logged in");
36            } else {
37                Debug.Log("FB is not logged in");
38            }
39            DealWithFBMenus(FB.IsLoggedIn);
40        }
41    }
42
43    void DealWithFBMenus(bool isLoggedIn)
44    {
45        if (isLoggedIn) {
46            DialogLoggedIn.SetActive(true);
47            DialogLoggedOut.SetActive(false);
48
49            if (FacebookManager.Instance.ProfileName != null) {
50
51            }
```



Screenshots

on Samsung Galaxy S6

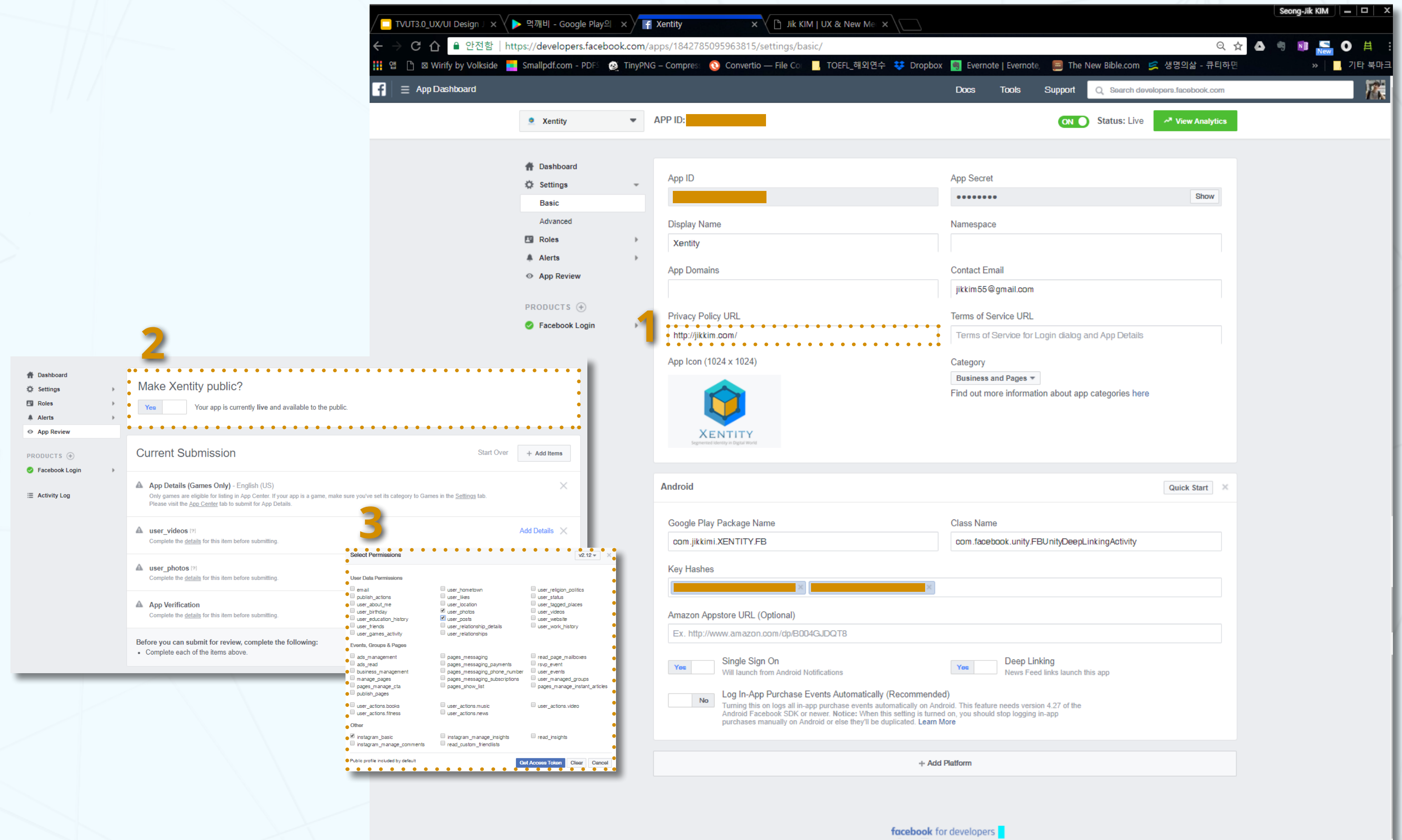


Dev.environment

developers.facebook.com

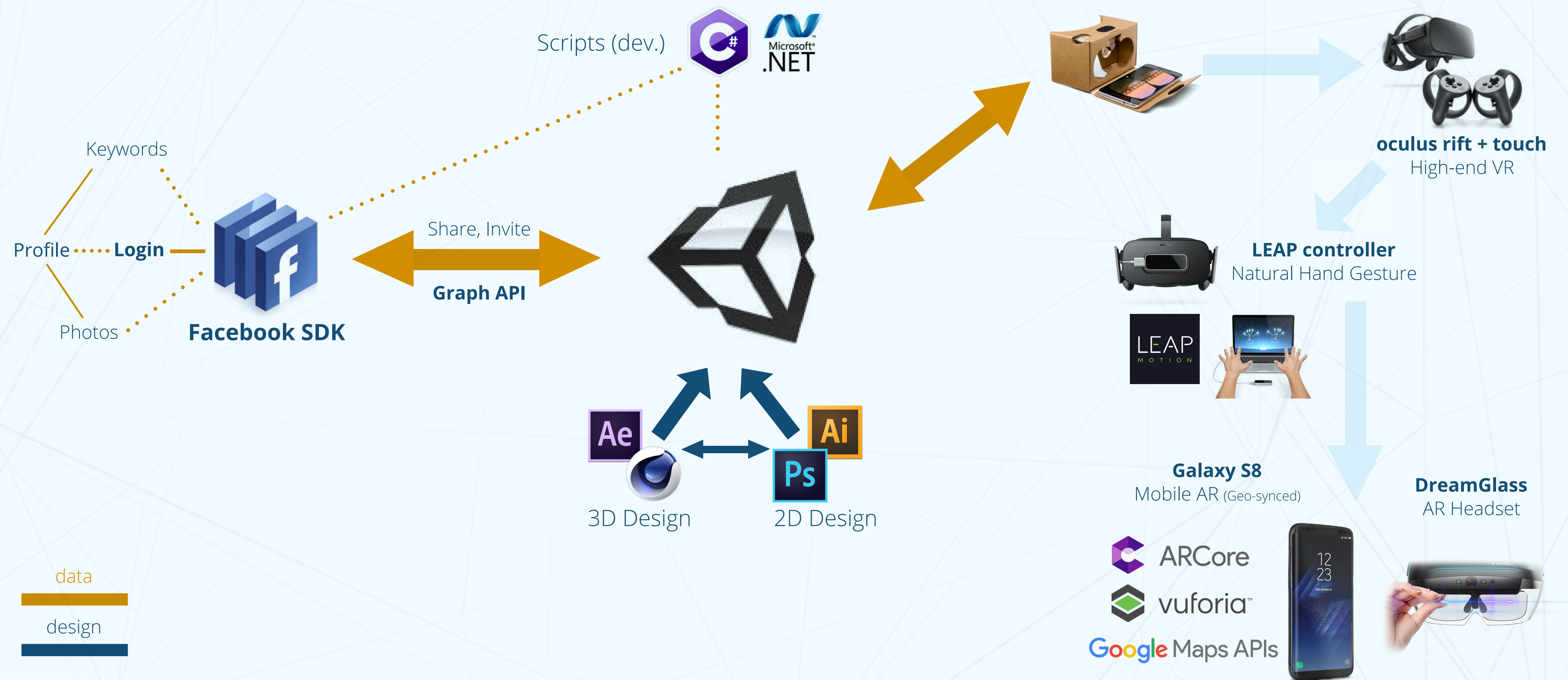
Xentity is still in progress.

- 1 In order to make it public
 - I published a Privacy Policy page in my personal website www.jikkim.com.
- 2 Toggle on 'Make Xentity Public?' button
- 3 Not only user's profile image but also photo albums and textual posts



Technical Block Diagram

Data Flows + Future of Xentity



Conclusion

Chapter 6

6

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XENTITY

Conclusion

XENTITY is aiming for interactive-visual storytelling to inspire users with awakening.

Problem

Most people use a smartphone and it has become a part of them. Though I am engaging in the digital media industry, I wanted to emphasize that technology should be a part of the genuine world and help people to be more empathetic. 'Alone Together' phenomenon can be resolved by each one's awakening who he or she is.

Solution

Virtual reality is one of cutting-edge media technology, and visual storytelling is much powerful to intrigue inspiration. I adopted real-time interaction and immersive VR simulation. They contribute to users' embodied experience for memorizing extraordinary lessons of the artistic approach of VR interaction. Throughout Xentity VR experience, a user can enjoy playful

immersive storytelling. In addition, pre-designed messages and visual metaphors remind users of what are being missed by their digital actions in everyday life. Facebook integration is the strongest feature not only in concept but also in technology.

Challenges and Lessons

Unfortunately, tech part, especially, C# developing is the hardest process in this project. Unity 3D is also a little difficult to find someone who is handy at it because VR developing is a kind of frontier of new media. There were no standards, and it has just begun to be standardized. Plus, wireframe, mockup design, and prototype tests were so hard, because omnidirectional visualization is near impossible by conventional prototyping tools and methods. I have learned that user test of immersive experiences had better be conducted by an on-site test. It's much more effective for both moderator and testee to fill the gap between limited prototype and creator's intention. Nevertheless, Xentity will go on being improved and transformed to Xentity AR.



XENTITY AR

Position based recalling with augmented reality

Make Reality Unreal

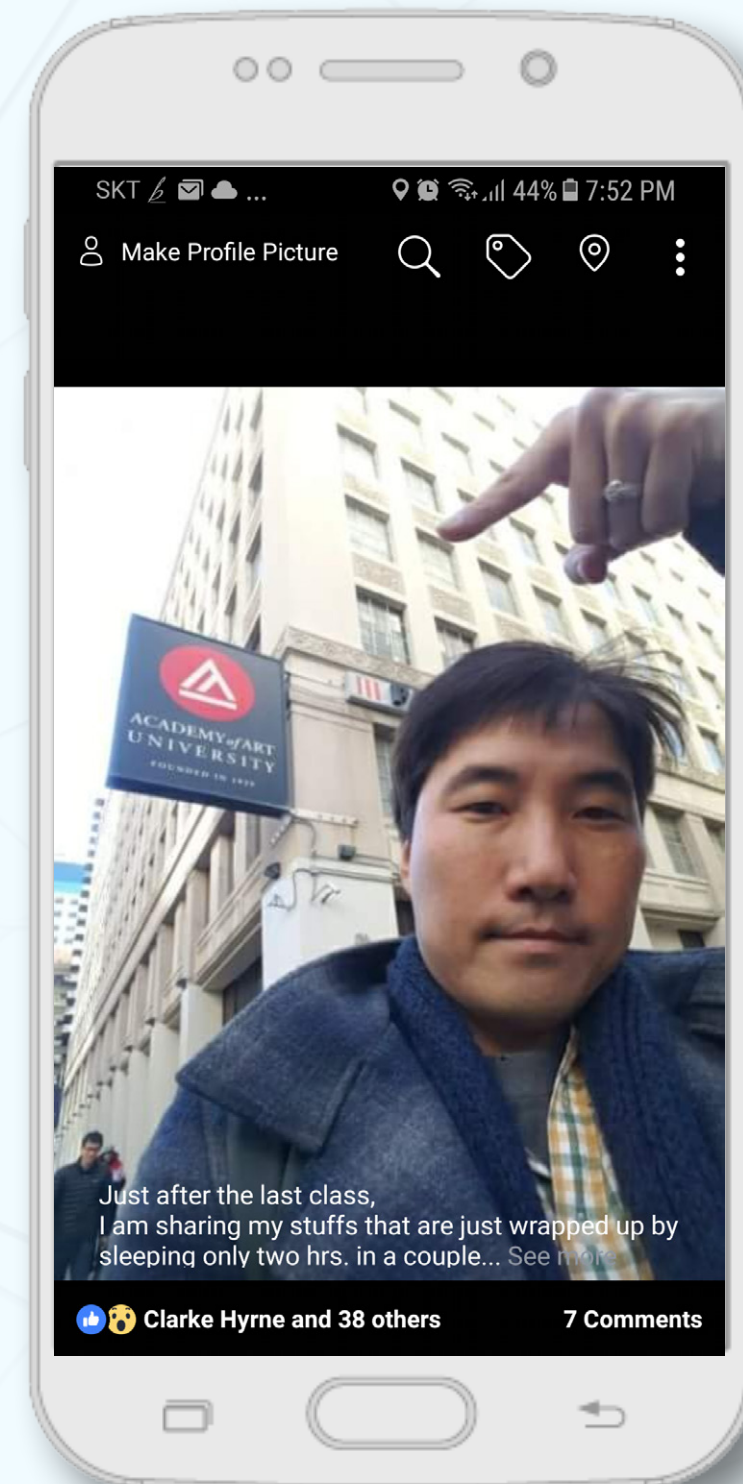
but it could remind you
what you and your friend did at the place,
where it was recorded by social media.



XENTITY AR

Proof of Concept - preliminary

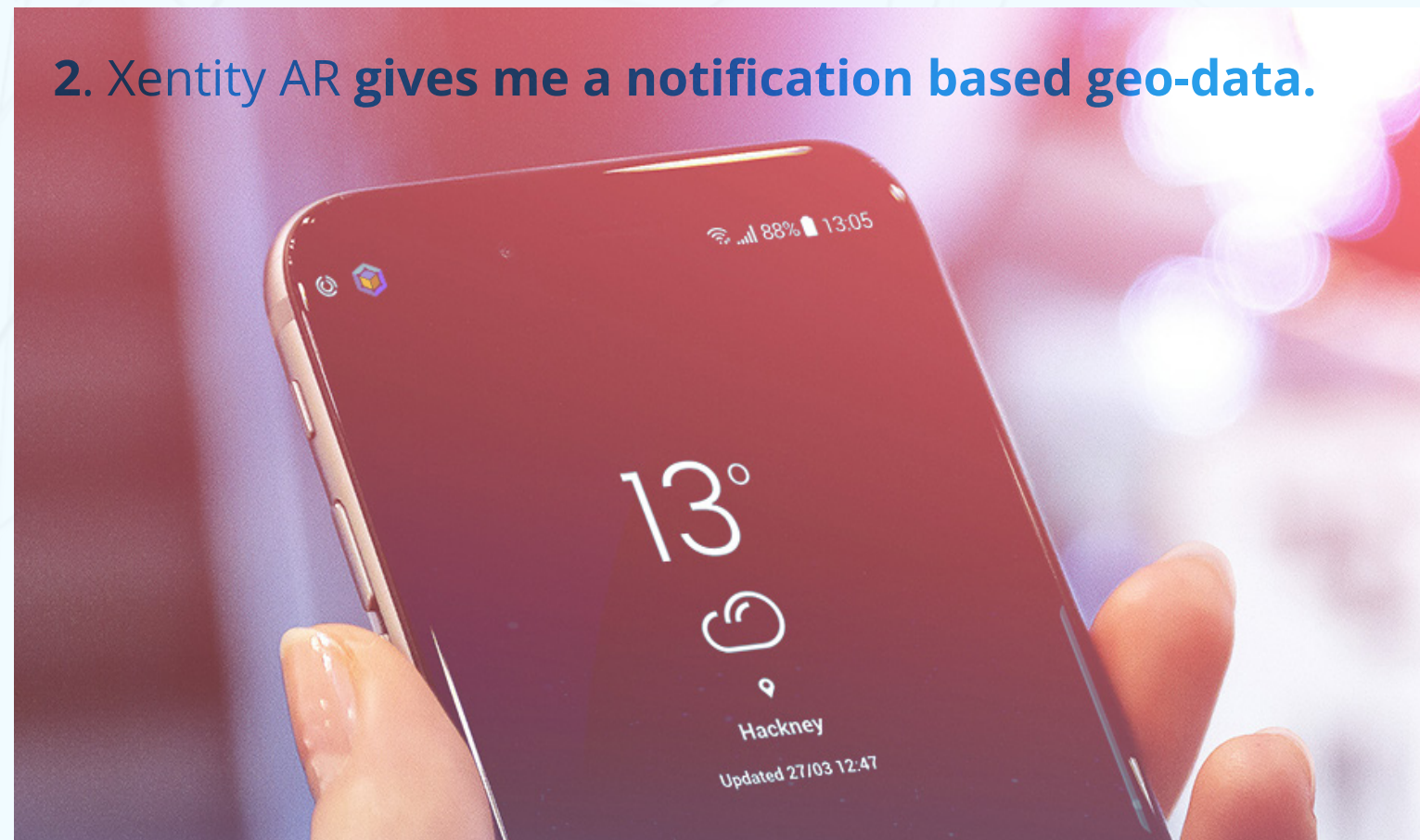
1. I posted a photo captured here on Facebook 1½ year ago.



XENTITY AR

Proof of Concept - notification

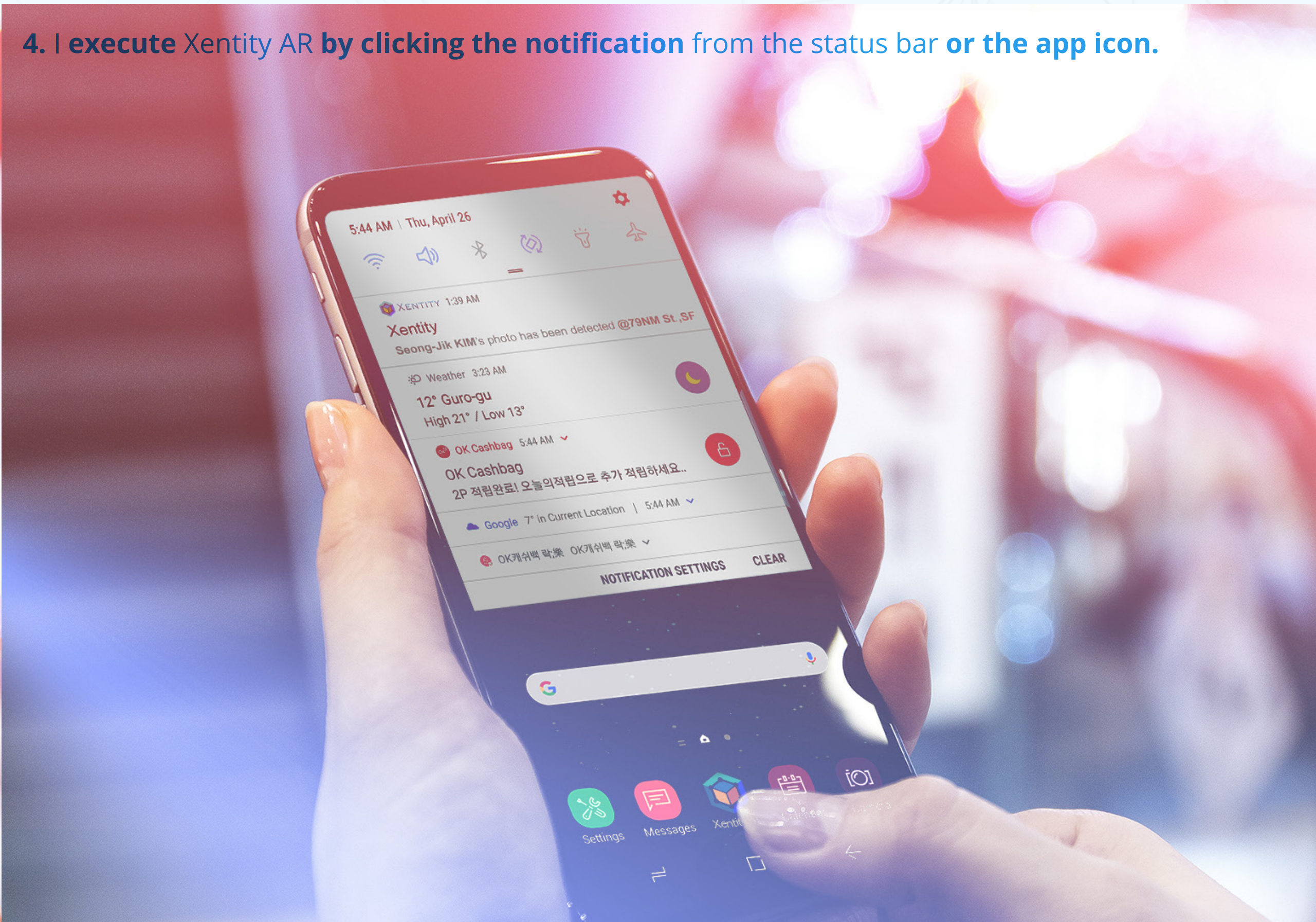
2. Xentity AR gives me a notification based geo-data.



3. I pull down the status bar to experience Xentity AR view.



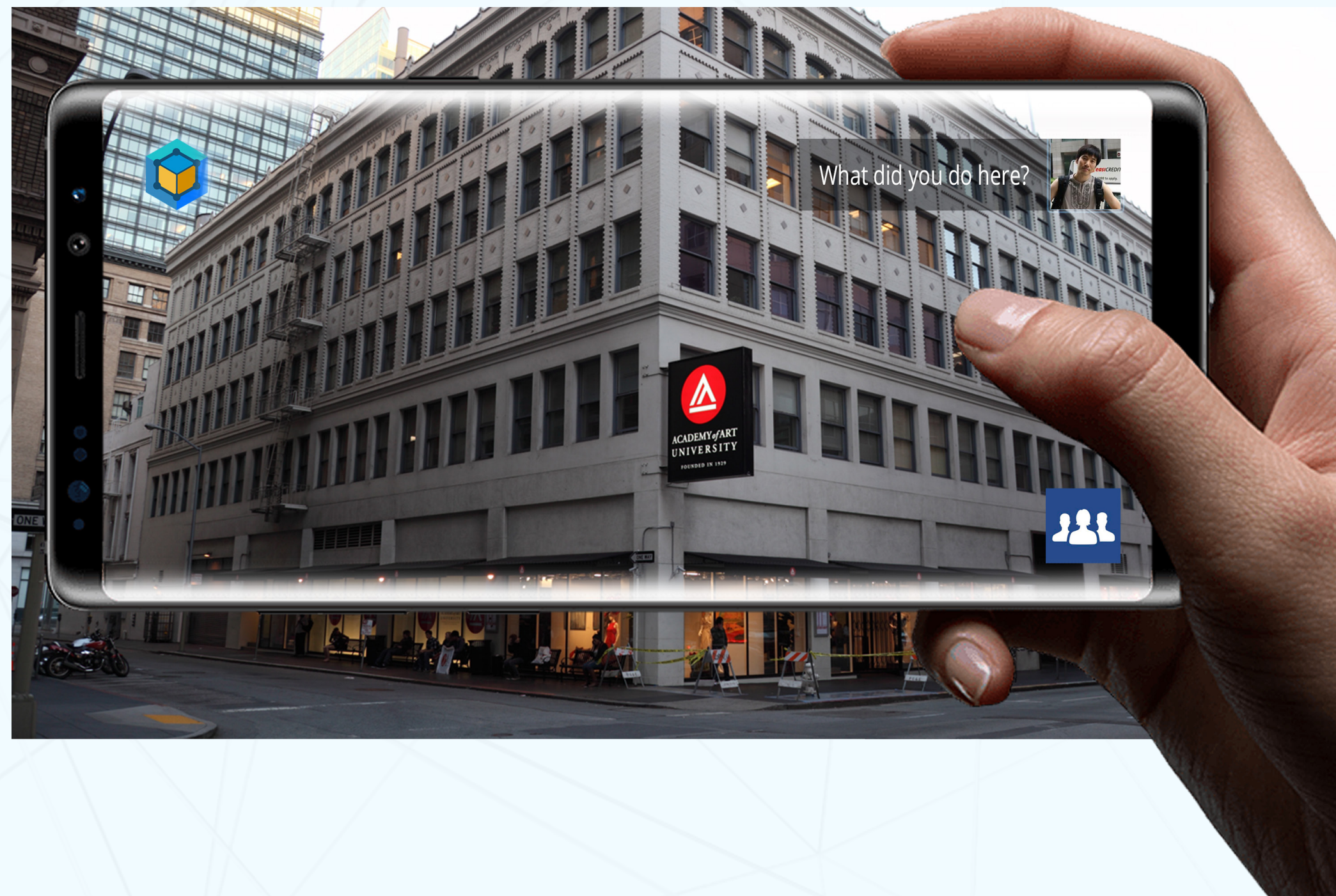
4. I execute Xentity AR by clicking the notification from the status bar or the app icon.



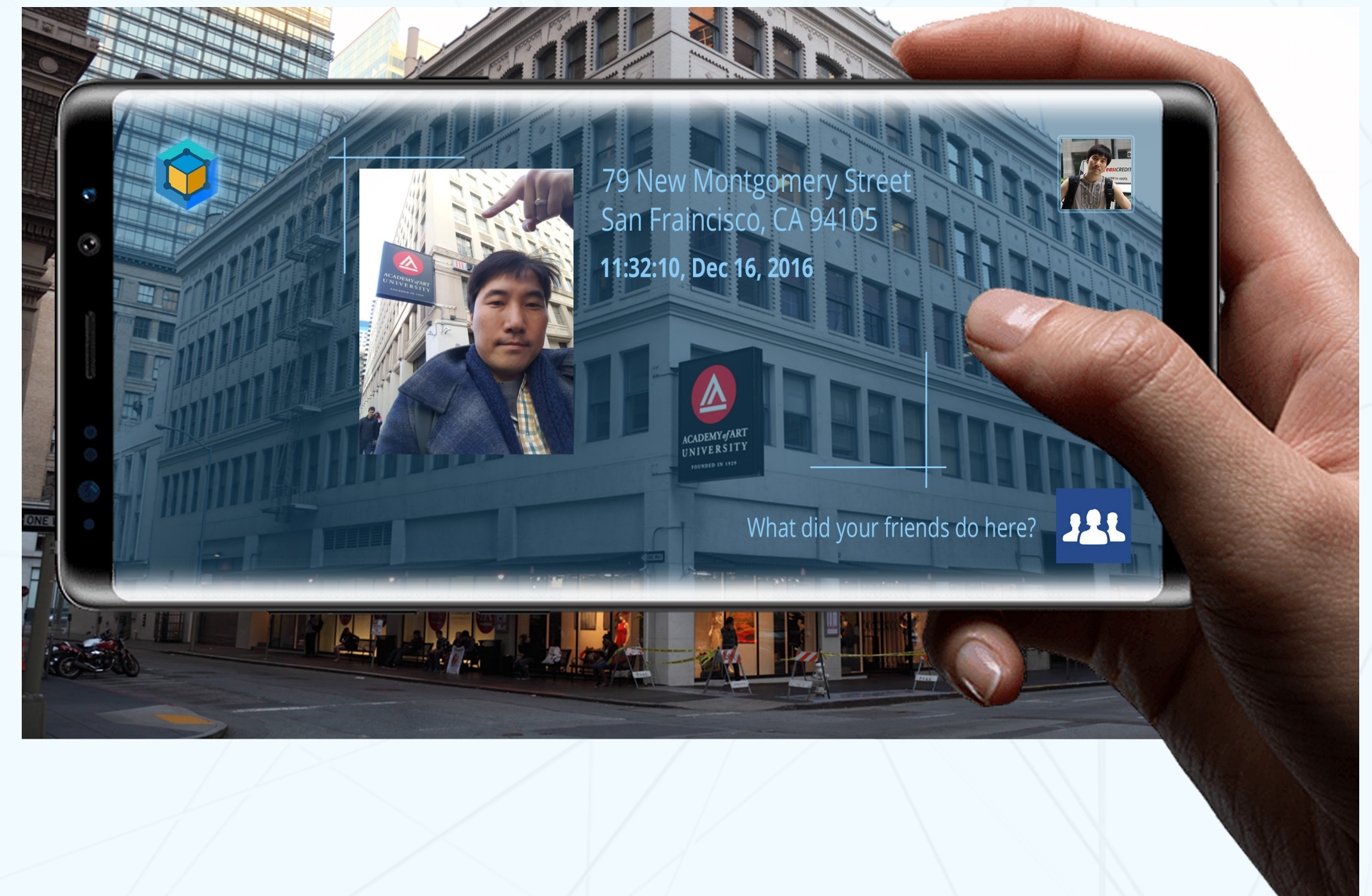
XENTITY AR

Proof of Concept - my image pulling

5. Xentity AR **turns on the camera** of my Galaxy S8, then it **searches photo library in the backend**.



6. Xentity AR **pulls the image** posted 1½ year ago with the **geo-data and captured time**.



XENTITY AR

Proof of Concept - my AR view

7. By Xentity logo input, my image is mapped on the building by a *SLAM algorithm* and *ARCore*.

Plus,
an **imaginative** augmented reality **simulation** is visually illustrated in a **real-time AR view**.

- **Pointillism texture overlay**
- Using the photo which has the exact geo-data of the captured position
- **A visual transformation**
from a land to a water on adding floating cloud to make AR dreamy
- **Digital textured 3D avatar** of mine is moving in the AR scene by **pre-recorded gestures**.



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XENTITY AR

Proof of Concept - friends' image pulling

8. When I click the friends icon on the bottom-right of the screen, friends list is slid in from the right like the mockup image.

After doing it,

I **choose my Facebook friend**, AAU.Fashion.

- **Xentity AR pulls my friend's image** posted a week ago with the geo-data and captured time.
- By **dragging Xentity logo on the pulled image**, AR simulation begins.



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XENTITY AR

Proof of Concept - AR view with my friend's photo

9. By Xentity logo input, my friend's image is mapped on the building by a *SLAM algorithm* and *ARCore*.

Plus,

an **imaginative** augmented reality **simulation** is visually illustrated in a **real-time AR view**.

- **Pointillism texture overlay**

- Using the photo which has the exact geo-data of the captured position

- **A visual transformation**

- from a land to a water on adding floating cloud to make AR dreamy

- **Digital textured 3D avatar** of my friend's is moving in the AR scene by **pre-recorded gestures**.



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XENTITY AR

Proof of Concept - sharing AR scene

10. By clicking Xentity logo again,
a AR scene is posted to Facebook.



11. Shared AR simulation on Facebook
(posted to my timeline, and tagged my friend's account.)



Project Links

Chapter 7



Bibliography

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XENTITY

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Bibliography

Links

TED Talks

- [Connected, but alone? \(Sherry Turkel\) ▶](#)
- [How VR can create the ultimate empathy machine \(Chris Milk\) ▶](#)

Research

- [Alone Together \(Sherry Turkel, 2010\) ▶](#)
- [Fluid Movement and Creativity \(Michael L.Slein, Nalini Ambady, 2012\) ▶](#)

Statistics

- <https://sproutsocial.com/insights/facebook-stats-for-marketers>
- <https://sproutsocial.com/insights/new-social-media-demographics>
- <https://zephoria.com/top-15-valuable-facebook-statistics>
- <http://www.dreamgrow.com/top-10-social-networking-sites-market-share-of-visits>

**** Git repository** https://bitbucket.org/xentity_Jack/xentity

**** Android build** <http://bit.ly/2qiSEea> (in progress ver.)

Video

- [Concept video ▶](#)
- [Prototype demo video ▶](#)

Competitor / Inspiration

- <https://www.tiltbrush.com/>
- <https://vr.google.com/earth/>
- <https://cityvr.com/>
- <http://milk.co/treachery>
- <http://www.notesonblindness.co.uk/vr/>

GDS Journals

- [UX Design ▶](#)
- [Visual Design ▶](#)
- [Motion Graphics ▶](#)
- [VR Prototyping ▶](#)

Portfolio [http://www.jikkim.com/ ▶](http://www.jikkim.com/)

Thank You!



XENTITY

Segmented Identity in Digital World

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