Pokemon GO! to my Business: Leveraging AR to Grow your Business

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Who am I?

- Engineer - UMich BSE/MSE '17/'18
  - Currently @ Ford Robotics
- Futurist
- Two-bit hacker :)
- AR Enthusiast
  - Previously worked for Occipital
  - Depth Sensor + Computer Vision
  - VR/AR Bridge Headset

Outline

- Forward to Basics
  - What is Augmented Reality ?
  - Recent AR feats in Business
  - Our AR Future
- Bringing AR to your Business
- Your First AR App (in 30 minutes or less)

Who is this talk for?

- Technologists + Engineers in the VR/AR space
- Businesses who want to be on the cutting edge of Product Marketing and Branding
- People who like to dream

What is Augmented Reality ?

What is Augmented Reality?

"Connecting the physical and virtual divide"

"A more visceral way to interact with the world"

"Magic"

What is Augmented Reality?

Can be many things!

- Simple Heads-Up Display
  - Literally writing text on a display in front of your face
- Simple geolocation / localization
  - Pokemon GO, Ingress
- Gesture-based
  - Leap Motion hand controller that allows you to interact with virtual objects using your hands
- Spatially Integrated
  - Using advanced computer vision algorithms to map the world, then overlay virtual objects into it
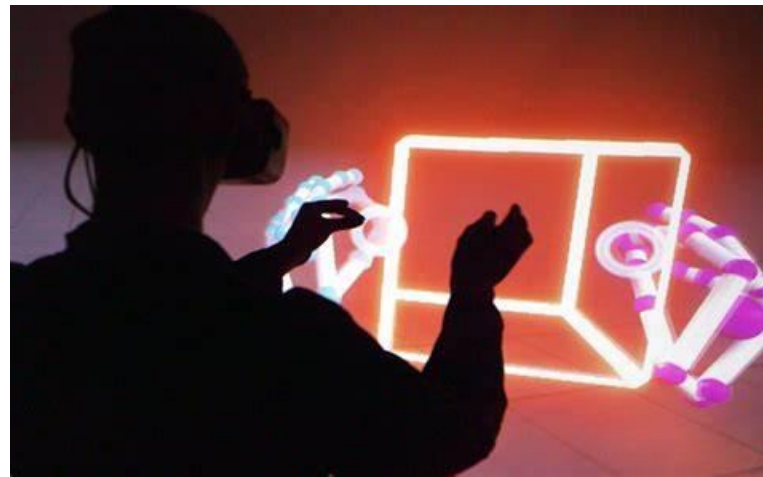
What is Augmented Reality?

- Not a new concept
- Heads-Up Displays, VR/AR have a great history in 20th century Science Fiction
- L. Frank Baum mentions "electronic display/spectacles overlaying data onto real life" in *The Master Key* (1901)
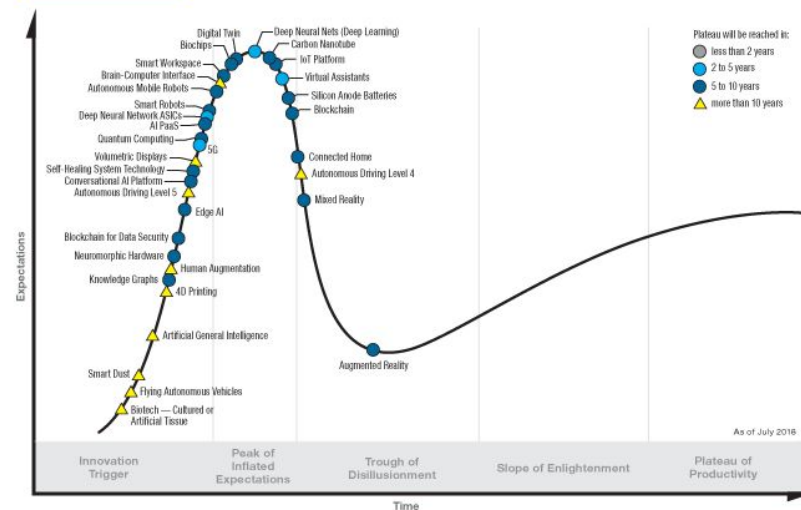- First realized AR system - Virtual Fixtures, built by USAF (1992)

AR Hype Cycle

- Now - 2010s
- AR has passed Peak of Inflated Expectations (Pokemon GO 2016)
- Coming through Trough of Disillusionment
- My personal take for 06/2019
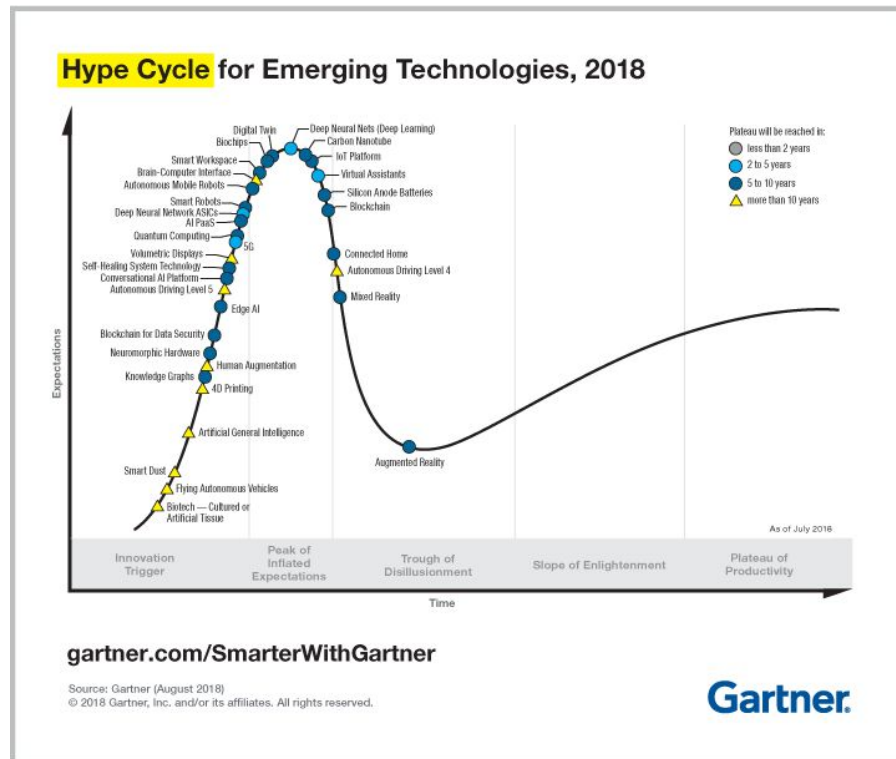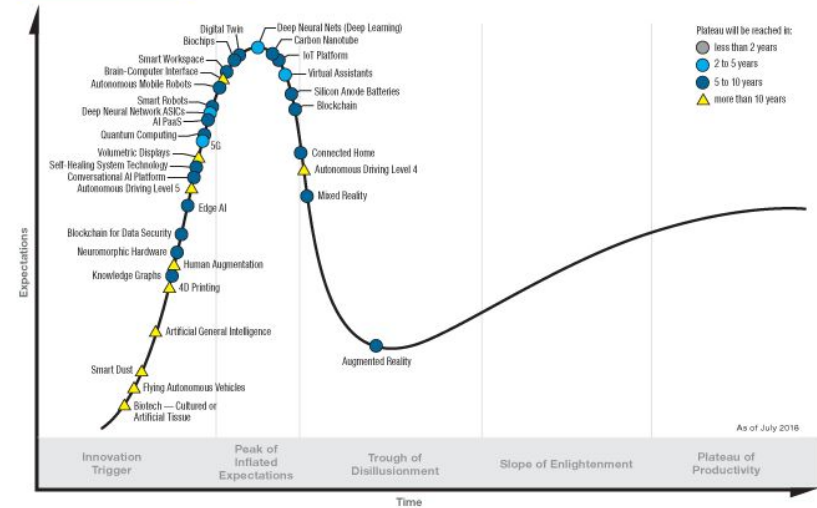 - Coming into Slope of Enlightenment

AR Hype Cycle

- Many early AR companies have come and gone, or are severely struggling
  - Google Glass, Magic Leap, Meta, Leap Motion …
  - Too consumer focused, didn't solve any real problems
- Mid-stage AR companies hitting stride
  - Microsoft Hololens 2 built specifically for industry (manufacturing, design, arch)
  - HTC Vive, other VR/AR headset excel in gaming with buy-in from content creators

Hype Cycle for Emerging Technologies, 2018

gartner.com/SmarterWithGartner

Source: Gartner (August 2018)
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Gartner.

AR Hype Cycle

- Late stage winners will be niche companies catering to areas such as fashion, design, industry
- .. and of course tech giants whose platforms support them (groan)

Hype Cycle for Emerging Technologies, 2018

Recent AR Feats in Business

Pepsi Ad Installation (2014)

Occipital Bridge Headset (2016)

Immersive

Uses smartphone

Maps space around you, then puts virtual overlays/characters in it

Microsoft Hololens Teleconferencing (2016)

IKEA Place (2017)

19 Crimes Talking Wine Bottle (2017)

Magic Leap Whale (2017)

Cautionary Tale

Overpromised, way under-delivered

Our AR Future

Digital Twin

- Superimpose internal data on a physical machine
- Show where fuel cell lives in an Autonomous Vehicle without opening the hood
- Locate system faults immediately
    - System reports error
    - Then highlights area needing repair

Mirrorworld

- Overlay alternate realities on top of the real world
- Instead of your boring home, you're relaxing in a park
- Instead of a boring suburban street, you're playing AR soccer on Mars with your friends (who might also be on Mars)
- Ideas are in very early stages of conception, a lot of room to grow
  - Done right, this may change certain fundamentals of human interaction
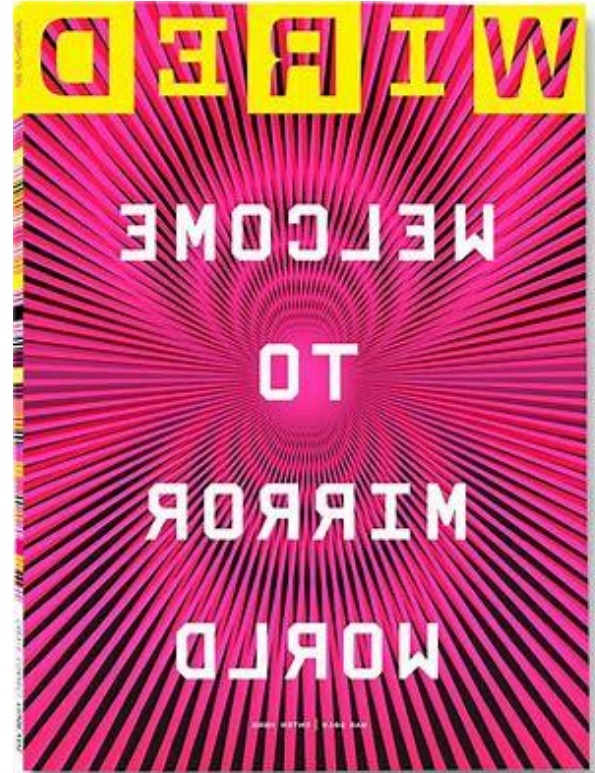
Hyper-Interactivity

Hyper-Reality - Dystopian Views

Bringing AR to your Business

Is AR a good fit for your business?

- Most businesses, directly or indirectly will see an incorporation of AR technologies
  - .. perhaps only janitorial staff will be unaffected (let's not think about that too hard)
- As with all new technologies, AR offers novelty
  - Novelty stirs up intrigue, can drive sales in the short term
  - Case-in-point: Pokemon GO "Pokestops" attracting hordes of people to nearby stores
- Long term, will act as points of interacting with your brand
  - 19 Crimes offers an experience in watching a wine sticker talk
  - IKEA Place allows you to place virtual furniture in your living room
- **As AR platforms grow, advertising opportunities will be HUGE**

AR as Problem Solver

- Restaurateurs: Tired of patrons asking how big the filet mignon is?
  - Make a 3D Scan of your food and upload them to an AR app
- Construction Workers: Lost your measuring tape?
  - Search 'AR tape measure' on the app store and find dozens of options
- Office Grunt: IT won't give you a 3rd monitor?
  - Whip out your Hololens/Meta/Vive/Oculus and start working with 5 monitors

AR as Business Point of Contact

- Why go to the store when you can walk around your house and shop?
- Brick & Mortar vs Amazon storefront vs AR storefront
  - Amazon changed the game, AR can change it even more
    - More interactive experiences
- New customer channels! Reach different audiences!
  - More important as commerce landscape widens
- Trade-offs
  - IKEA Place
    - Bringing item home vs Delivery
    - Being able to see item in your own house

Growth Potential

Augmented Reality and Virtual Reality Market is expected to grow at a **CAGR of 41.2%** during the forecast period 2016 to 2025 and expected to reach **US$ 130.01 Billion in 2025** from US$ 5.83 Billion in 2016.

- The Insight Partners (6/14/19)

Your First AR App

AR Creation Platforms Becoming Ubiquitous

- Unity/Unreal Game Engines supporting development
    - Apple ARKit (iOS)
    - Google ARCore (Android)
    - Vuforia Engine (iOS/Android)
- Full cloud solutions
    - 8thwall - host your AR application on your own website - don't make your clients download an app

My First AR App - Vuforia Engine + Unity

Steps to success:

1. Get free 3D model of Pikachu from grabcad.com
2. Animate model using mixamo.com
3. Search youtube until you find a tutorial by someone who did something similar to what you want to do
4. Use their code, using basic knowledge of computer science as necessary

pikachu

My First AR App - Using Vuforia Engine + Unity

Thanks!

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