The 2017 CES was held January 5-8, 2017 in Las Vegas. It stepped into its 50th year in 2017. I induct 11 kinds of technologies appearing in this show, which would be substantial progress in the following years. And I try to analyze their key factors including self-risks, market maturities and potential impacts to look for most amazing and innovating technologies.

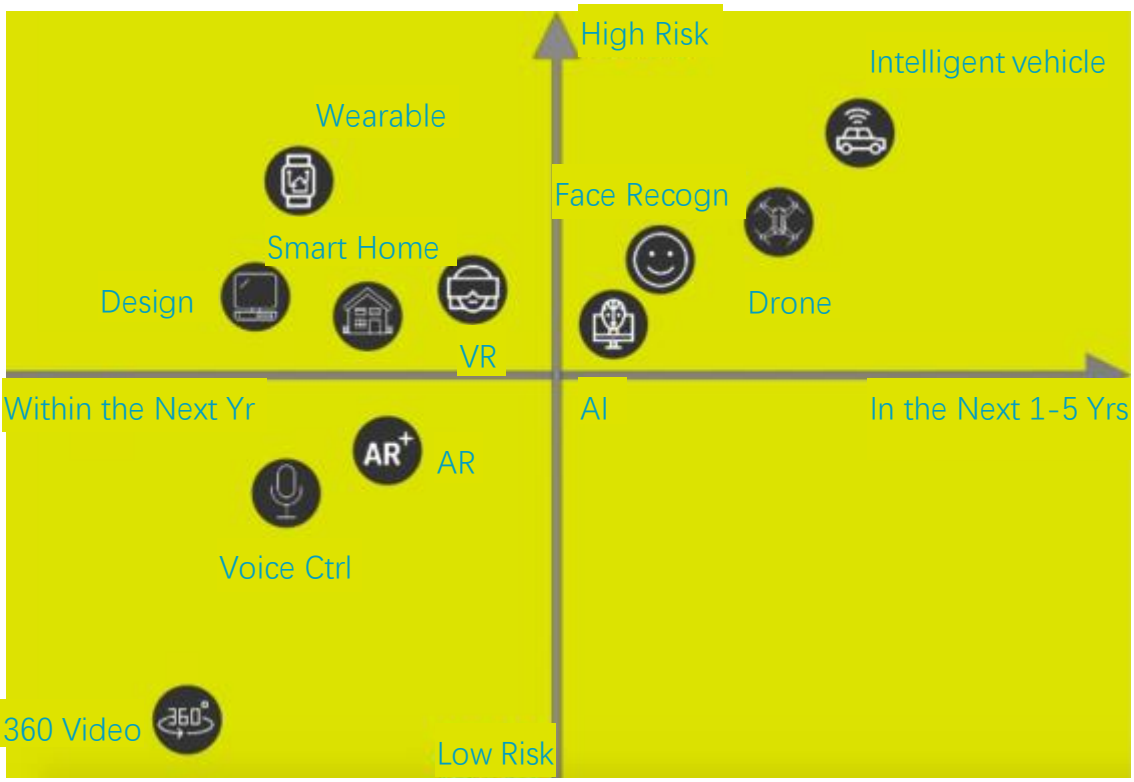

Fig 1: Risks vs Maturities

In Fig 1, x-axis denotes the maturity of a kind of technology, which suggests if there exists infrastructure, hardware and marketing, and the y-axis denotes the risk of that, which suggests the cost, spread, platform and standard of that kind of technology.

360 Video

In 2017, 360 Video will be popular with mobile devices and more content will appear in these mobile platforms. In the beginning, entertainment (game and movie) and publication will drive it. Not only just posting panoramic photos, 360 video cameras create opportunities for users in social networks to make their user-generated content popular over Internet.

Obsidian by KanDao Technology, a 3D Panoramic (Virtual Reality) camera with a

collection of hardware and software, is born for producing the exquisite Virtual reality contents. As an advanced VR production tool, Obsidian aims at making high standard VR works in an economical and convenient way.

VR

There were so many amazing VR product appearing in 2016, and in 2017, VR products will continue improving. When hardware and toolsets get more and more powerful and convenient, content will get plentiful as well.

Tilt Brush by Google is a virtual reality (VR) app that lets you paint in three-dimensional space. With intuitive controls and a pick-up-and-play design, it is an experience for everyone — professional artists, dreamers and even casual doodlers.

AR

Pokemon Go made AR so popular in 2016. In fact, at most current, compared to VR, AR should be more practical to apply in industry. For example, Daqri smart helmet can denote the problem on pipeline to the plumber and help him fix it.

R-9 by ODG is the first ever mobile prosumer AR smart glasses and will lead the way to a paradigm shift in how people experience mobile computing and entertainment content. Targeted to a variety of WFOV experiences from light enterprise to prosumer media consumption, it is also a development platform for sophisticated mobile mixed reality and smartglasses applications.

AI

A year ago, DeepMind's AlphaGo beat the world champion at Go, a game that has more moves than there are atoms in the universe. A few months ago, an AI network learned to play *Doom*, a game of maze navigation, resource finding and survival. Today, AI networks can write captions of photographs and imitate the painting styles of van Gogh and Monet. AI networks have learned the fine motor skills required to open a bottle of water, how to get up off the floor and walk, and even how to drive a car on dirt roads in the rain. The achievements of GPU deep learning have been nothing short of miraculous.

NVidia's work on a computing model focused on visual and AI computing. Built

on top of the GPU that we pioneered, this computing model can solve problems that normal computing simply can't. It gives NVidia a unique position in growth markets — gaming, virtual reality, data center and self-driving cars — and allows us to tackle the most challenging computing problems in the world.

Voice Control

In fact, voice control is not new. But when voice control associated with AI, Voice AI makes every ordinary electric appliance smart.

Amazon allows developers to build and publish skills for Alexa using the Alexa Skills Kit. These skills are 3rd-party developed voice experiences that add to the capabilities of any Alexa-enabled device (such as the Echo). These skills are available for free download using the Alexa app. Examples of skills include the ability to play music, answer general questions, set an alarm, order a pizza, get an Uber, and more. Skills are continuously being added to increase the capabilities available to the user. In the home automation space, Alexa can interact with devices from Philips Hue, Belkin Wemo, SmartThings, Wink, Insteon, LIFX, IFTTT, ecobee, and Nest Thermostats.

Smart Home

Smart home is the residential extension of building automation and involves the control and automation of lighting, heating (such as smart thermostats), ventilation, air conditioning (HVAC), and security, as well as home appliances such as washer/dryers, ovens or refrigerators/freezers that use WiFi for remote monitoring.

Smart Remote by Sevenhugs is the world's first contextual control system for connected homes. It lets you control everything at home with just one touch. When you point Smart Remote at a device, the screen automatically adapts and you just need one touch to control it. A seamless and intuitive control system.

Intelligent vehicle

Intelligent vehicle technologies commonly apply to car safety systems and self-contained autonomous electromechanical sensors generating warnings that can be transmitted within a specified targeted area of interest, say within 100 meters

of the transceiver. In ground applications, intelligent vehicle technologies are utilized for safety and commercial communications between vehicles or between a vehicle and a sensor along the road.

S3 Solid State LiDAR Sensor by Quanergy System is the world's first solid state 3D LiDAR sensor used for computer-assisted perception for safe and autonomous cars. This compact LiDAR sensor can detect, classify and track objects so the computer can assist the driver in avoiding accidents or take over the driving task in a safe manner.

Facial Recognition

Newly emerging trend, claimed to achieve improved accuracy, is three-dimensional face recognition. This technique uses 3D sensors to capture information about the shape of a face. This information is then used to identify distinctive features on the surface of a face, such as the contour of the eye sockets, nose, and chin.

Synaptics' latest biometric technology will cross reference several points of authentication to ensure the user attempting to access a device or application is the correct person. The manufacturer's Multi-Factor Biometric Fusion Engine will pair its Natural ID fingerprint sensors with camera-based facial recognition sensors from KeyLemon to give users several biometric options on one device.

Users can select authentication options based on their current situation. With no hindrances, users can select fingerprint or facial recognition based on preference. Or if a user is unable to authenticate with their fingerprint due to wearing gloves in the cold weather, for example, they can opt for facial authentication.

Wearable Technology

Wearable technology, wearables, fashionable technology, wearable devices, tech togs, or fashion electronics are smart electronic devices (electronic device with microcontrollers) that can be worn on the body as implant or accessories. The designs often incorporate practical functions and features.[1]

Wearable devices such as activity trackers are a good example of the Internet of Things, since "things" such as electronics, software, sensors and connectivity are effectors that enable objects to exchange data through internet with a

manufacturer, operator and/or other connected devices, without requiring human intervention.

K'Track G (G for Glucose) by PKparis is the first wearable tracker that allows diabetics to measure in real time their blood glucose without blood extraction. Worn on the wrist, K'Track G allows users to live with diabetes without anxiety, pain, or effort.

Drone

An unmanned aerial vehicle (UAV), commonly known as a drone, unmanned aircraft system (UAS), or by several other names, is an aircraft without a human pilot aboard. The flight of UAVs may operate with various degrees of autonomy: either under remote control by a human operator, or fully or intermittently autonomously, by onboard computers.

PowerUp FPV by PowerUp Toys lets you experience flight as if you were sitting in the cockpit of your very own paper airplane creation. The airplane generates a live video stream to the included VR cardboard Viewer. You can see what your plane sees, controlling your paper drone with intuitive movements of your head.

Design Assistance

Cubit by Plott is our first step in tools that are capable of thinking / problem solving, and we are passionately excited about it. By freeing us up from complex measurements and the many, many calculations needed for layout placement, it enables us to focus on the reason why we're doing a project in the first place. To visually plan out from "how it is now" to "how I want it to be", and guiding us to the points to make those changes in real life.