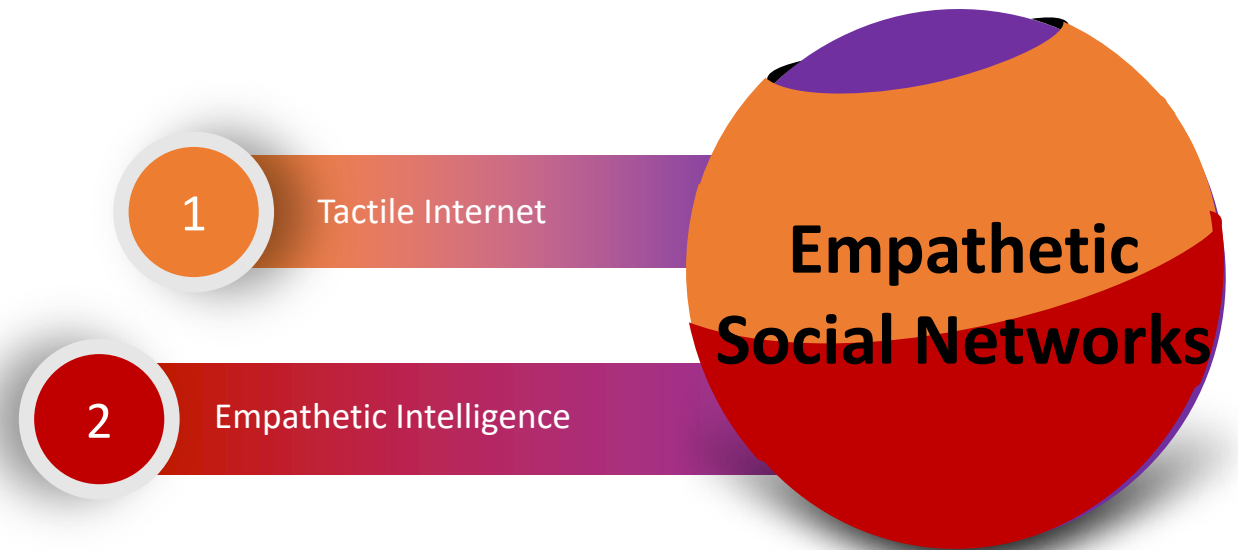# 6G: The Age of The Empathetic Intelligence
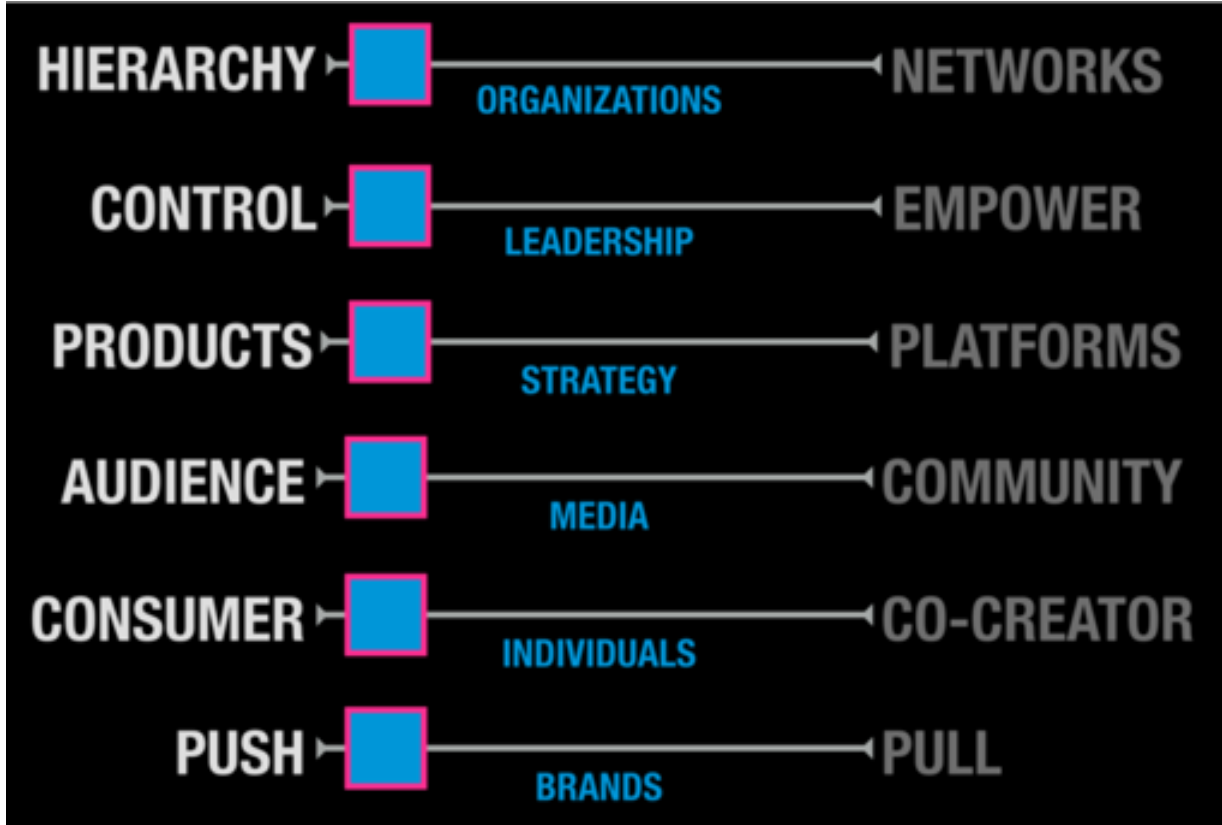
Neeli R. Prasad, Ph.D.

CTO, SmartAvatar B.V.

# Empathic Intelligence in Social Networks

**Interaction between human and applications with empathy that gives a feel & touch of a real-life world experience.**

1. Tactile Internet

2. Empathetic Intelligence

**Empathetic Social Networks**

# Social Networks



HIERARCHY → ORGANIZATIONS → NETWORKS
CONTROL → LEADERSHIP → EMPOWER
PRODUCTS → STRATEGY → PLATFORMS
AUDIENCE → MEDIA → COMMUNITY
CONSUMER → INDIVIDUALS → CO-CREATOR
PUSH → BRANDS → PULL

Source: Mark Bonchek's Six Shifts

Accessing, perceiving, manipulating or controlling real or virtual objects or processes in perceived real time by humans or machines

# Future of Social Networks

- 2019: around 2.77 billion people started using social media. With smartphones and internet connectivity becoming cheaper and easier to access, expect to see these numbers grow even higher.

- Prediction: By 2021, more than 3 billion people will be using social media.

- Potentional for marketing to reach a massive and engaged audience.

- With COVID-19: connectivity and reach to family, friends and colleagues.

- This is not just limited to the popular social media sites like Facebook, Twitter, and Instagram.

# Social Network of Things

**Enabling real-time haptic interaction with visual feedback**,
with systems supporting not just audiovisual interaction, but
also that involving robotic systems to be controlled with an
imperceptible time-lag.

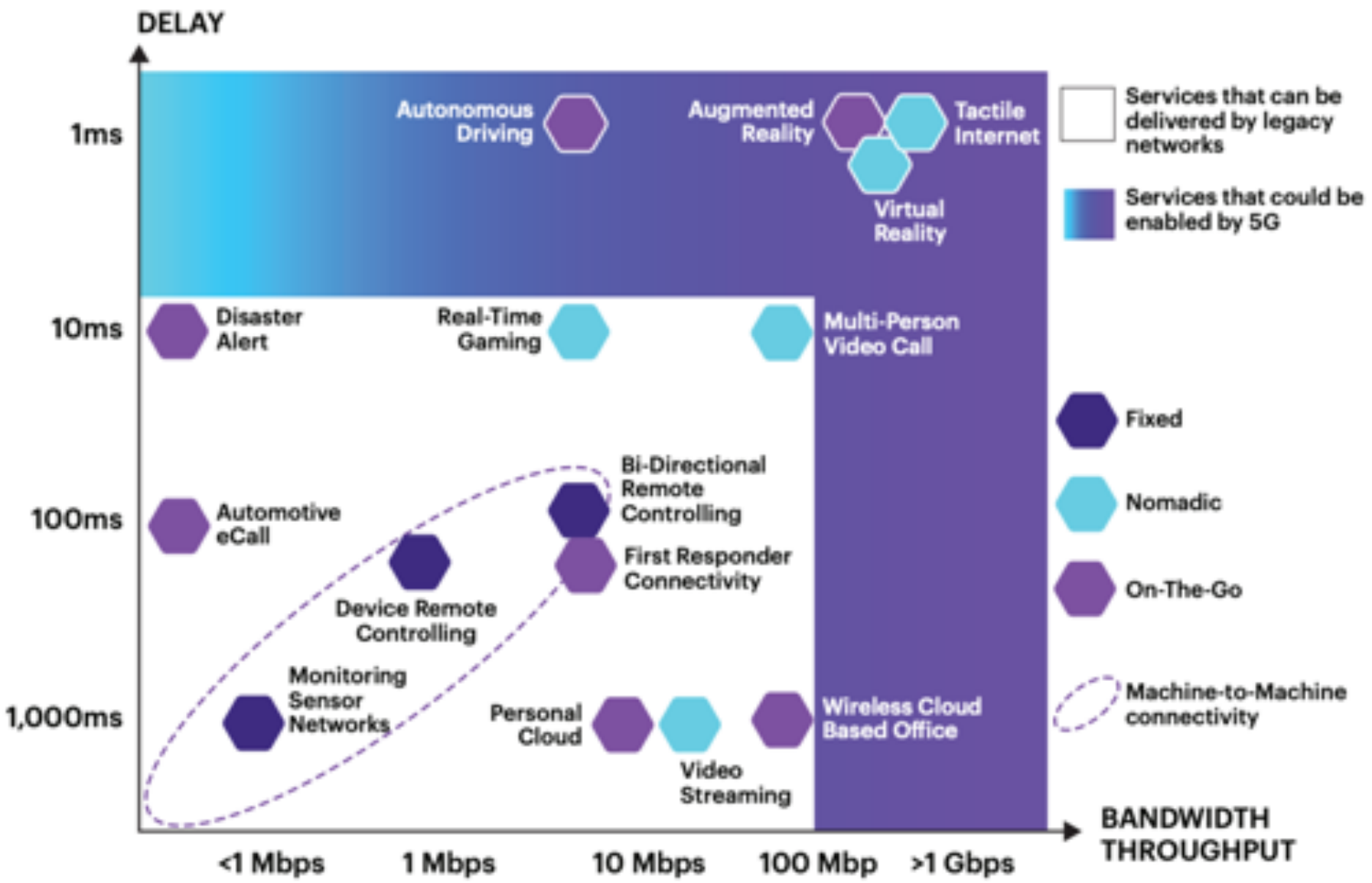**Unforeseen incident** 1s

**Auditory reaction** 100ms

**Visual reaction** 10ms

**Haptic sensation** 1ms

Haptic technology that can create an experience of touch by applying forces, vibrations or motions to the user.
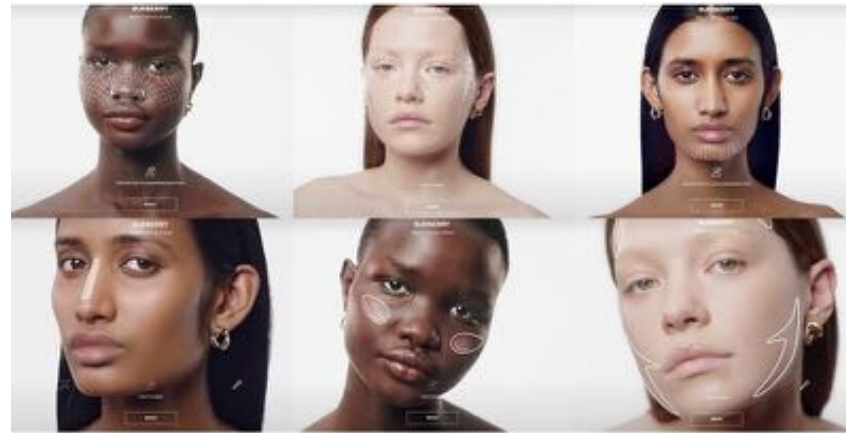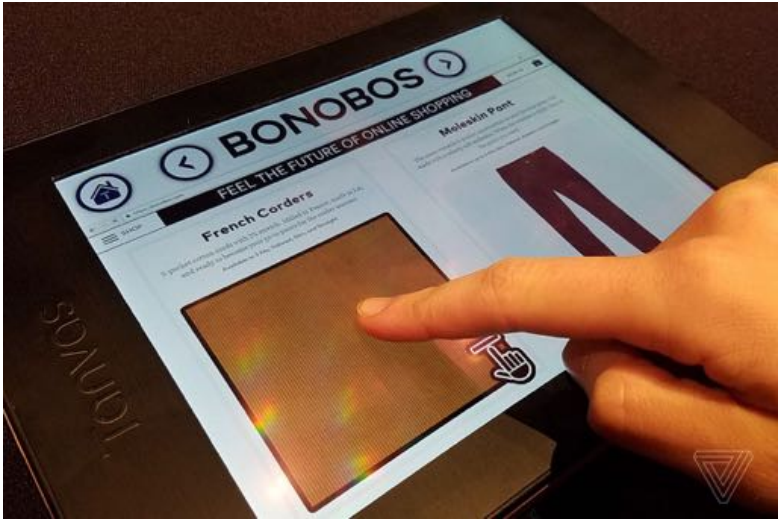
# Enable Innovative Applications

Healthcare


Teleporting


Virtual Makeup


Haptic e-Commerce

Applications
Enable by Social
Network of Things


Exoskeleton

# Empathetic Intelligence?
## In The Age of the Empathy, Networks & Systems Must Empathize with Human Emotions



**There are many use cases in business that require at least some demonstration of empathy**

# Use Cases: Empathetic Intelligence

## Empathetic AI Reader

Empathetic AI Reader can read the book with tone and inflection much the same way you would read the book to your children. When you are away on a business trip, your children will still be able to enjoy memorable storytime moments.
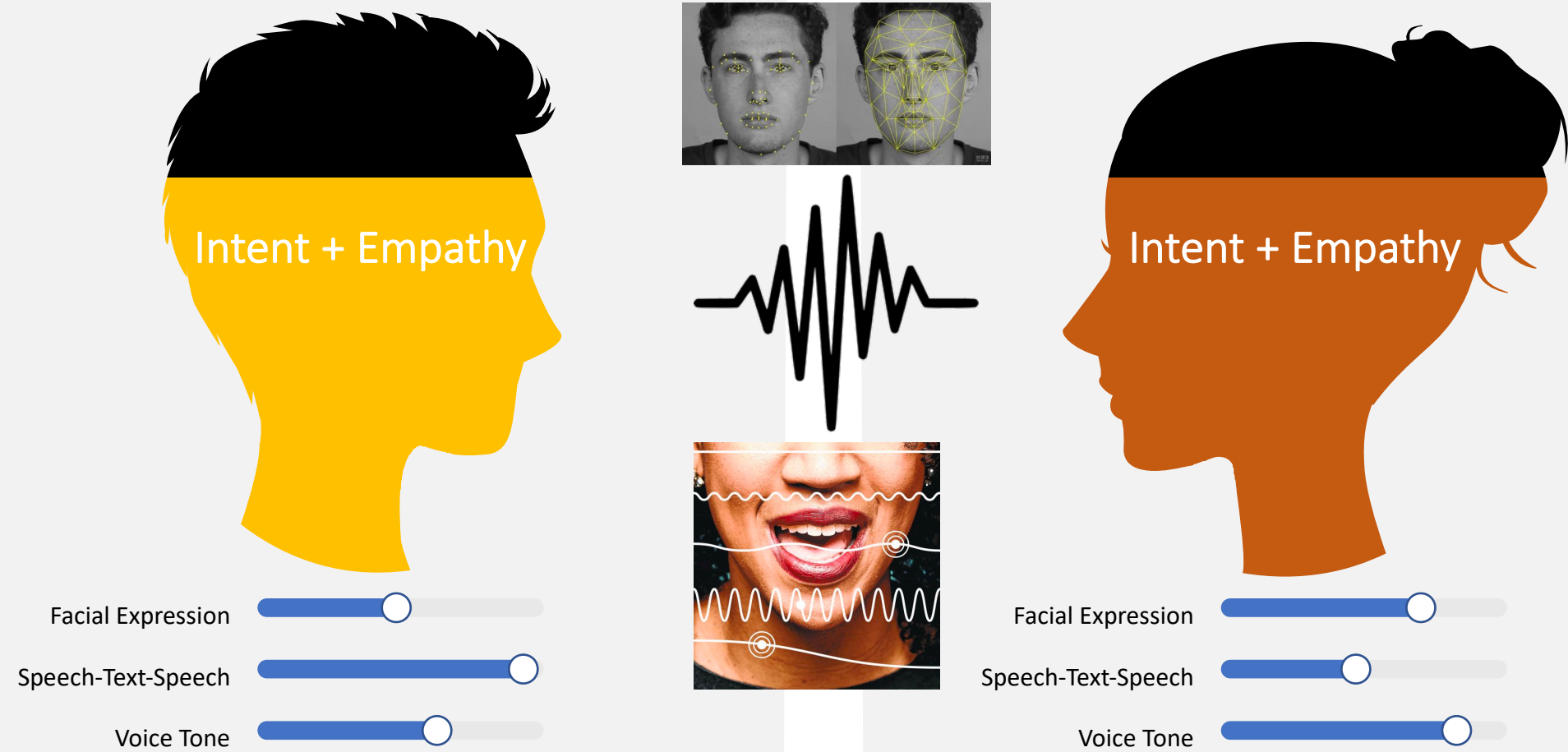


## Customer service chatbot

This chatbot will be able to speak the scripted questions with tone and inflection as a person would. Then, based on the client's responses, the empathetic chatbot will be able to sense complex emotions such as frustration.
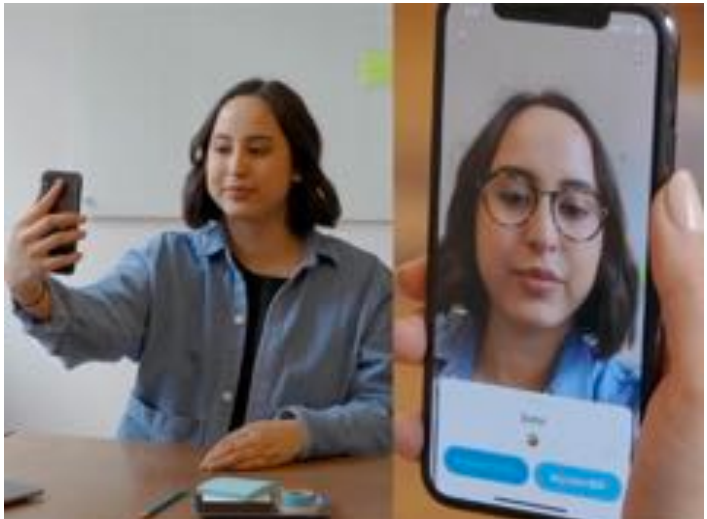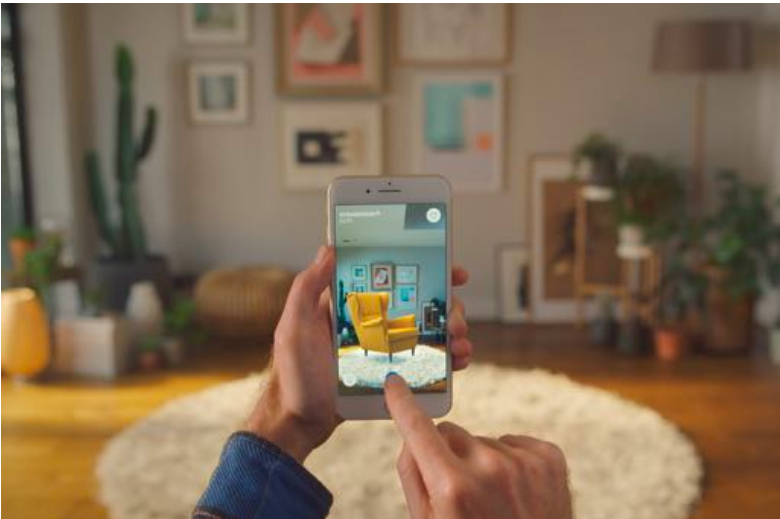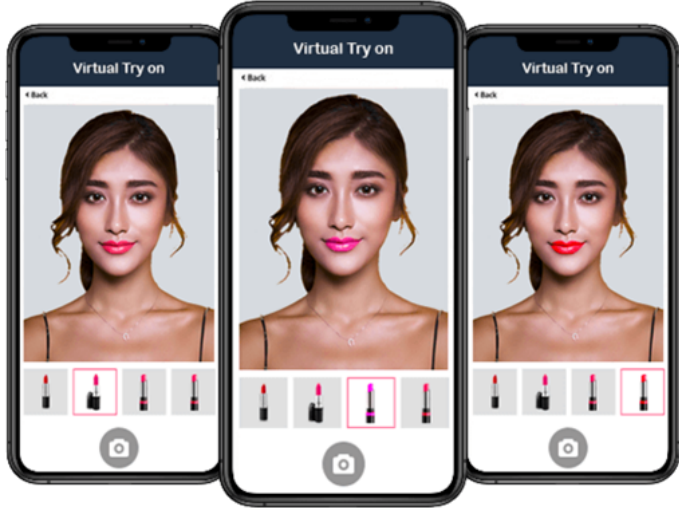
Based on the quality of the emotional experience of the customer, the chatbot can decide to forward the customer on to a live service agent when the customer is unusually frustrated.

# Empathetic Intelligent: Facial Expression, Text & Voice Tone

Intent + Empathy

Intent + Empathy

Facial Expression

Speech-Text-Speech

Voice Tone

Facial Expression
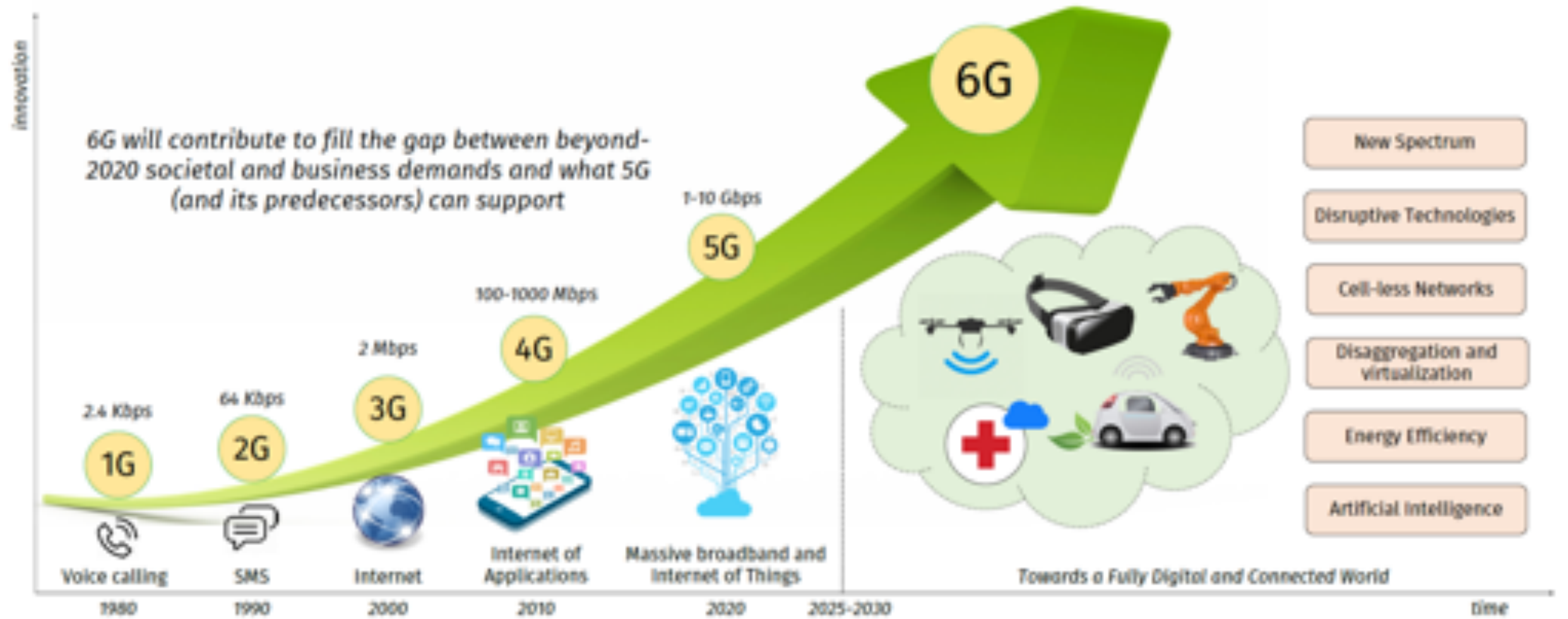
Speech-Text-Speech

Voice Tone

**Empathetic intelligence will be able to express the emotions that were used to make empathetic decision. This will improve the chance of gaining wider human acceptance.**

# Empathetic Social Networks & Systems

# Evolution from 1G to 6G: Networks w/o Borders



6G will contribute to fill the gap between beyond-2020 societal and business demands and what 5G (and its predecessors) can support

1-10 Gbps — 5G

100-1000 Mbps — 4G

2 Mbps — 3G

64 Kbps — 2G

2.4 Kbps — 1G

6G

New Spectrum

Disruptive Technologies

Cell-less Networks

Disaggregation and virtualization

Energy Efficiency

Artificial Intelligence

Voice calling — SMS — Internet — Internet of Applications — Massive broadband and Internet of Things — Towards a Fully Digital and Connected World

1980 — 1990 — 2000 — 2010 — 2020 — 2025-2030 — time

innovation

# 6G - Networks without Borders Use Cases

**Empathetic Networks & Systems**

Networks & Systems for industry 4.0 and beyond "the age of intelligence" should incorporate human emotional intelligence with machine intelligence.

# Thank You

## Connect with me via LinkedIn

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