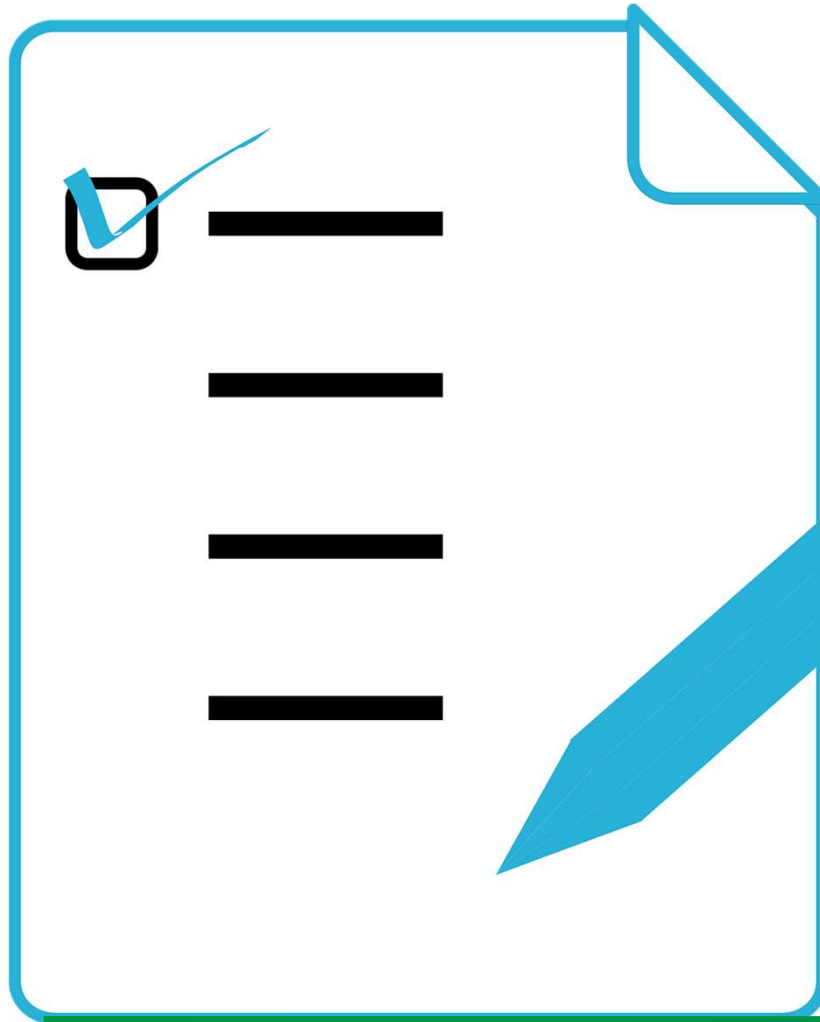# The Future ICT Professional

What makes a professional

What skills do you need for the future?"
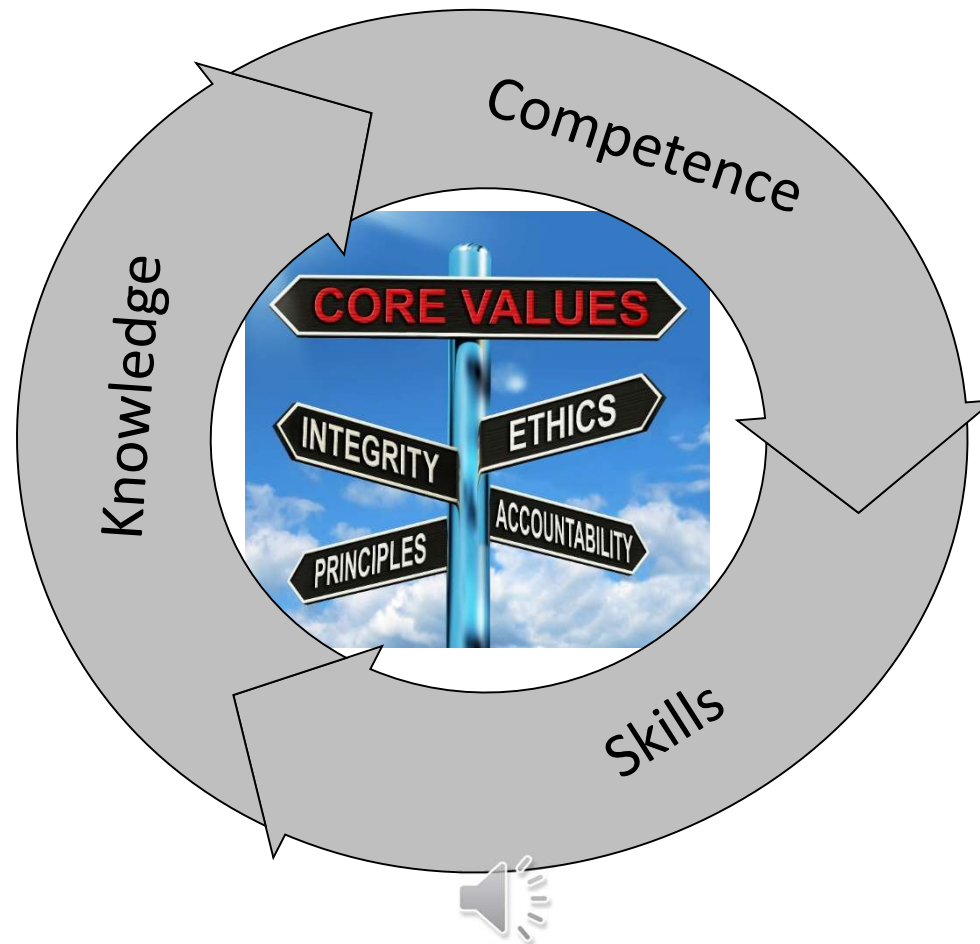
Moira de Roche PMIITPSA, FIITPSA
IFIP IP3 Chair
Twitter: moiraderoche

Topics

❖ **What is a Professional?**
❖ **Why is it important?**
❖ **What future skills must you develop?**

What is a Professional?

What is a Professional?

Skills & Knowledge	• Competence • Continuous Professional Development (CPD)
Service	• Internal & External Customers • Broader Community
Trust	• Trustworthiness • Ensures trusted computing
Accountable	• To self • To others
Ethical	• Subscribes to code • Sets good example
Pride	• Takes pride in the profession

Anatomy of a Profession

Governance	Influencers	Infrastructure	PD & Education
Organizational Capacity	Code of Ethics	Disciplinary Process	Initial Education & Training
Mission & Objectives	Standards of Practice	Accreditation	Competency Development
Professionalism Strategy	Body of Knowledge	Assessment	Certification credentials
PSB & Compliance	Competency Framework	PD Strategy & Capability	Certification

Definition

Ethics can be defined as acting in ways consistent with what society and individuals typically think are **good values**. Ethical behaviour tends to be good for business and involves demonstrating respect for key moral principles that include honesty, fairness, equality, dignity, diversity and individual rights.

Importance of ICT Professionalism

EU E-Skills initiative

*"The most important reason [to examine and build ICT professionalism] stems from the extent to which the increasing pervasiveness of ICT has the **potential to harm our economy and society**. The extent to which ICT is embedded in our lives is inevitably growing. If we fail to take steps to mature the ICT profession, it is likely that the risks to society from ICT will grow to unacceptable levels."*

E-SKILLS: Promotion of ICT Professionalism in Europe, an EU Call for Tender, July 2013

IFIP Strategic Objective

"Develop ICT as a global Profession"

❑ International Professional Practice Partnership IP3 formed

❑ IP3 leading development of global ICT profession

❑ Mission: establish a global partnership

    ❑ Strengthen the ICT profession

    ❑ Contribute to development of strong economies

Certified ICT Professionals essential to support: ICTs as critical tools for promoting human development, and reducing inequalities

IP3 Mission

❑ Encourage and support the development of both ICT practitioners and employer organizations

❑ Give recognition to those who meet and maintain the required standards for knowledge, experience, competence and integrity

❑ Define international standards of professionalism in ICT

❑ Emphasis on **partnership**

ICT profession same standing as accounting, medicine, law and engineering

IP3 Value Statement

A global IT Profession that delivers trustworthy computing for all stakeholders.

IFIP IP3 sets the global standard for professionalism and assesses professional bodies against these standards. We partner with notable world organisations to provide Trust in Digital. IFIP IP3:

- Assesses organizations for local requirements against a global standard
- Is backed by IFIP, the world's largest federation of computing organisations, with UN roots, and aligned with the UNs Sustainable Development Goals
- Strengthens governance by reducing risk - certified professionals are competent and maintain their skills & knowledge, and subscribe to a code of ethics
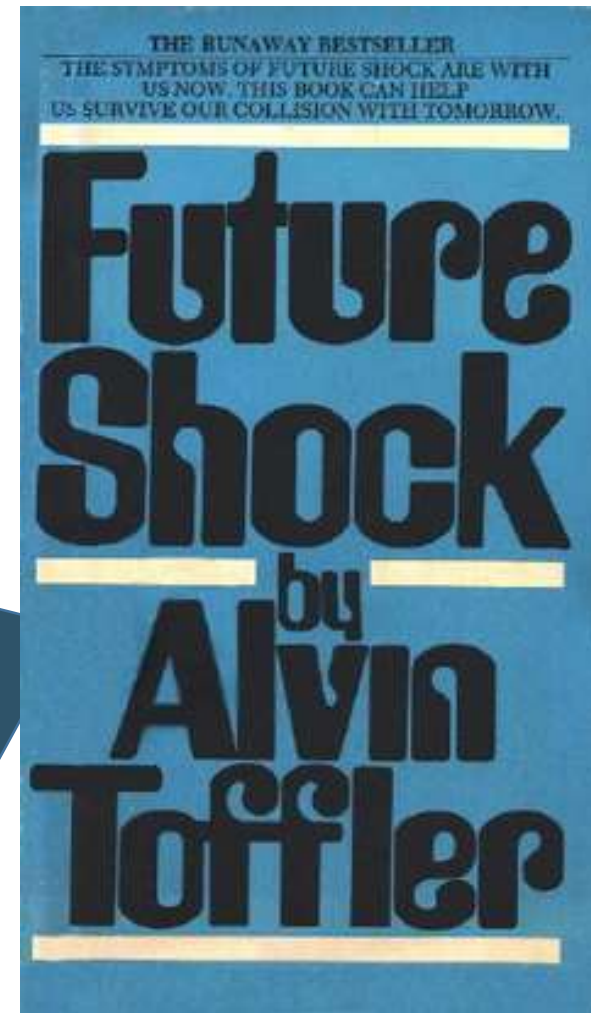
IP3 Duty of Care

iDOCED
ifip Duty of Care in Everything Digital

- ❑ Digital World
- ❑ Cost not most important factor
  - ❑ Reliability
  - ❑ Accountability
  - ❑ Ethics
- ❑ Legal liability
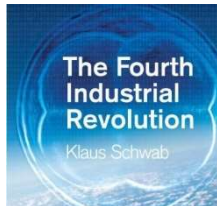- ❑ Digital Skills
  - ❑ Privacy & security

> iDOCED is designed to remind and support both providers and consumers of digital products and services that they have a duty of care in ensuring that they act responsibly in relation to the digital world, the organization states.

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn".

"By instructing students how to learn, unlearn and relearn, a powerful new dimension can be added to education. Tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn."
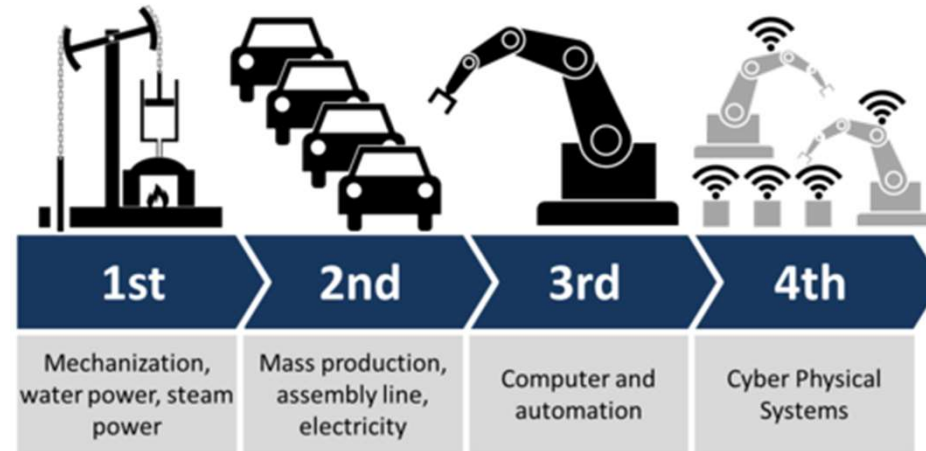
THE RUNAWAY BESTSELLER
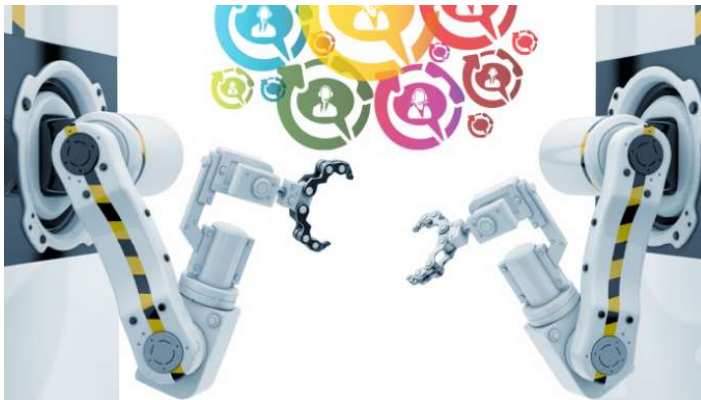THE SYMPTOMS OF FUTURE SHOCK ARE WITH US NOW. THIS BOOK CAN HELP US SURVIVE OUR COLLISION WITH TOMORROW.

Future Shock
by Alvin Toffler

4th Industrial Revolution

The Fourth Industrial Revolution
by Prof Klaus Schwab World Economic Forum 2016

1st	2nd	3rd	4th
Mechanization, water power, steam power	Mass production, assembly line, electricity	Computer and automation	Cyber Physical Systems

EXTREME automation, connectivity

Cyber-physical systems driven by AI and robots

Automation & AI example

- Goldman Sachs employed 600 equity traders in 2000. Today, there only 2

- Automated trading programs have taken over the work – supported by 200 computer engineers

- "...four traders can be replaced by one computer engineer. Some 9,000 people, about one-third of Goldman's staff, are computer engineers."*

5ᵗʰ Machine Age: Future of Jobs
WEF 2018-22

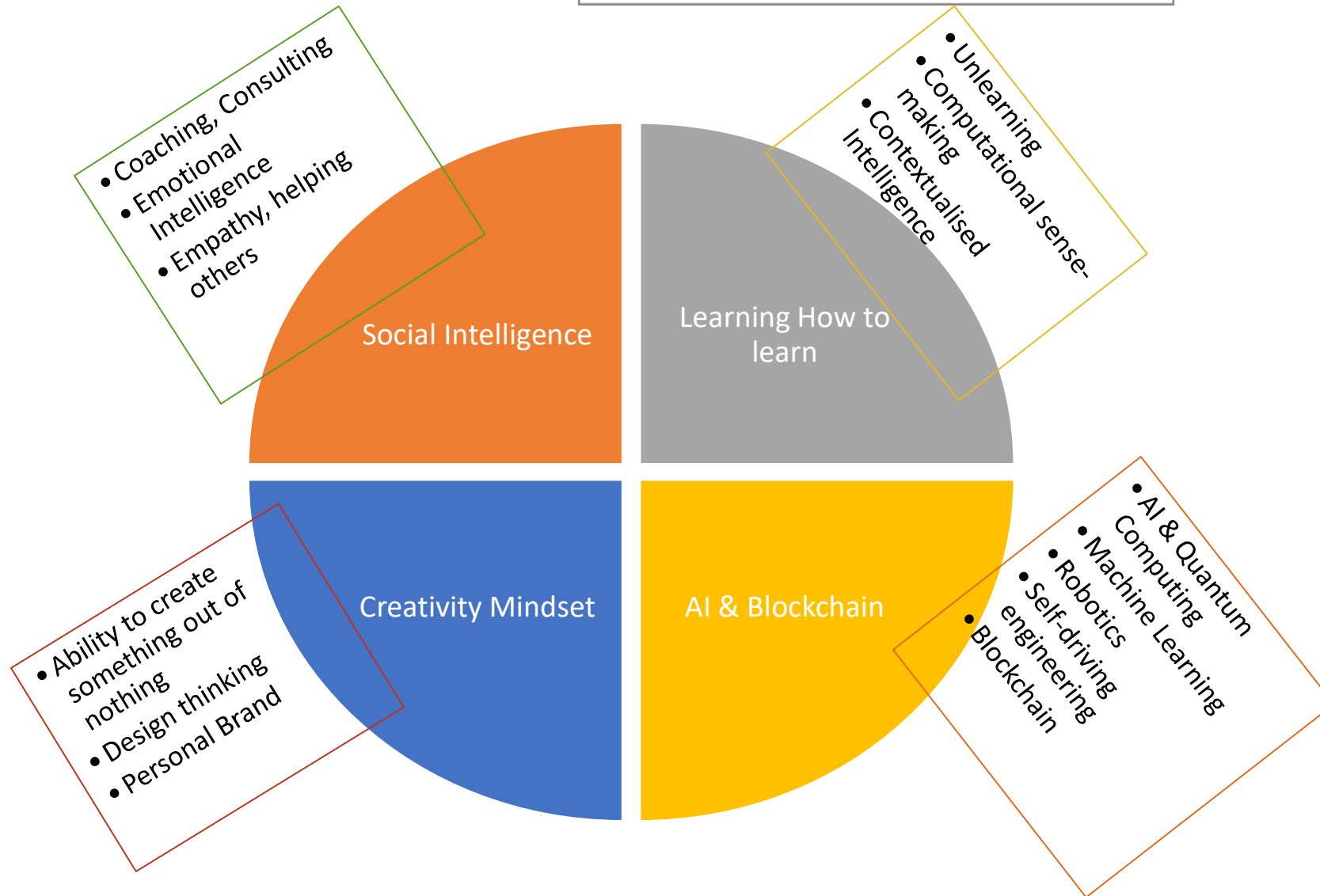## Table 4: Comparing skills demand, 2018 vs. 2022, top ten

Today, 2018	Trending, 2022	Declining, 2022
Analytical thinking and innovation	Analytical thinking and innovation	Manual dexterity, endurance and precision
Complex problem-solving	Active learning and learning strategies	Memory, verbal, auditory and spatial abilities
Critical thinking and analysis	Creativity, originality and initiative	Management of financial, material resources
Active learning and learning strategies	Technology design and programming NEW '22	Technology installation and maintenance
Creativity, originality and initiative	Critical thinking and analysis	Reading, writing, math and active listening
Attention to detail, trustworthiness	Complex problem-solving	Management of personnel
Emotional intelligence	Leadership and social influence	Quality control and safety awareness
Reasoning, problem-solving and ideation	Emotional intelligence	Coordination and time management
Leadership and social influence	Reasoning, problem-solving and ideation	Visual, auditory and speech abilities
Coordination and time management	Systems analysis and evaluation NEW '22	Technology use, monitoring and control

NEW '22

Source: Future of Jobs Survey 2018, World Economic Forum.

Future Skills

- Coaching, Consulting
- Emotional Intelligence
- Empathy, helping others

- Unlearning
- Computational sense-making
- Contextualised Intelligence

Social Intelligence

Learning How to learn

- Ability to create something out of nothing
- Design thinking
- Personal Brand

Creativity Mindset

AI & Blockchain

- AI & Quantum Computing
- Machine Learning
- Robotics
- Self-driving engineering
- Blockchain

Education Focus

- Creative endeavours
  - Scientific discovery
  - Creative writing
  - Entrepreneurship
- Social Interaction
  - Robots don't have emotional intelligence
- Physical dexterity and mobility
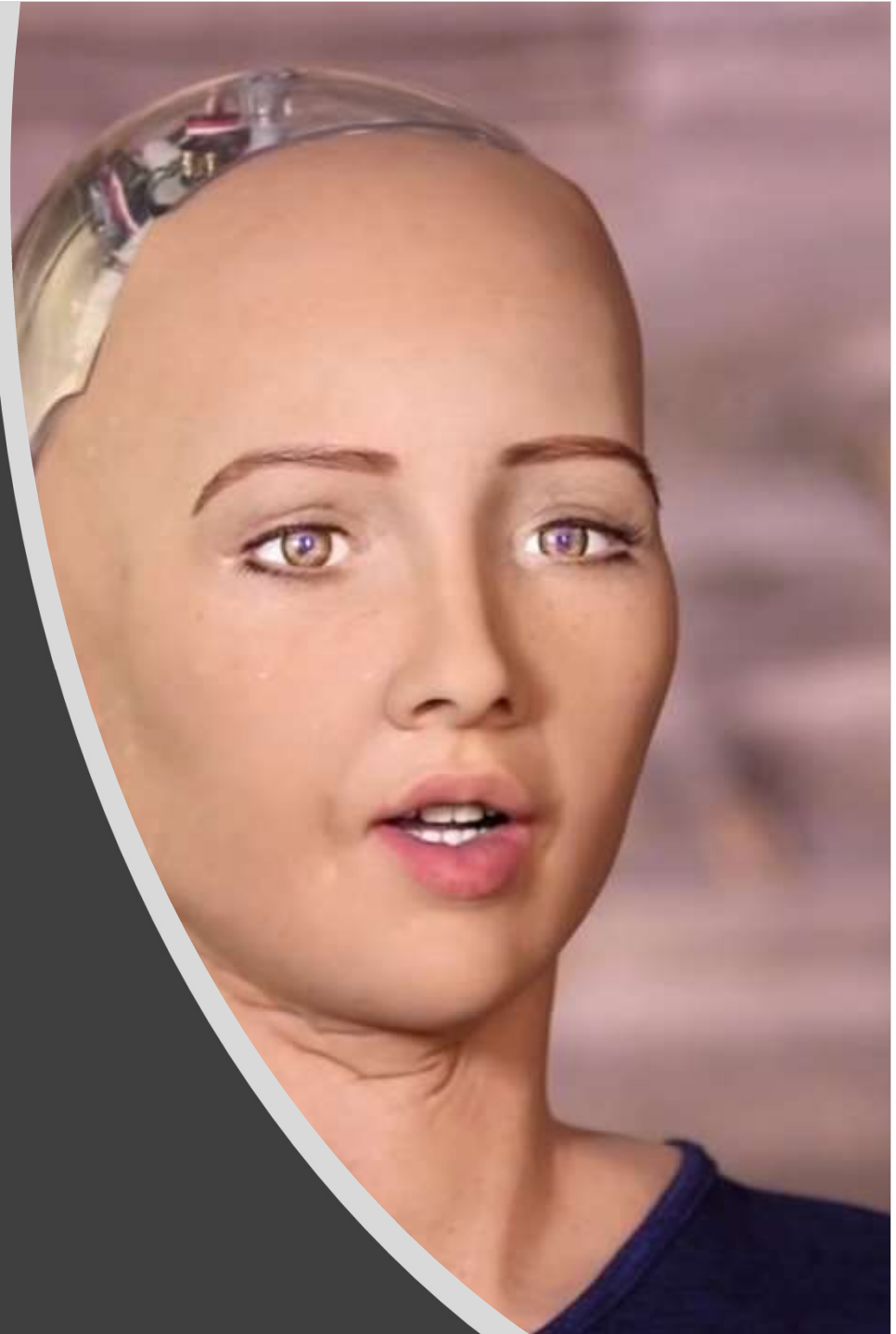
Creative Mindset

- Create something out of nothing
- Curiosity
- Design thinking
- Agile and adaptable
- Cognitive flexibility

Social Intelligence

- Coaching & Consulting
- Empathy
- Emotional Intelligence
- Networking
  - Collaboration
  - Leading by Influence
- Communication Skills
  - Negotiation
- Service Orientation
- Embracing Change
- Ethics

Business

- Culture & Diversity
- Leadership
- Entrepreneurship
  - Internal & External
  - Solopreneur
- Working in projects
- Working remotely
- Resilience

Benefits of Professional Development

- Education only
  - No place in 21st Century
  - Too many unemployed
- UN Sustainable Development Goals (SDGs)
  - Education high priority
  - Goals all rely on use of ICT
  - Reliable & trustworthy supply-side
  - All must contribute
- Currency of skills & Knowledge
  - Produce agile learners
  - Acknowledge rate of job changes
  - Ethics last forever
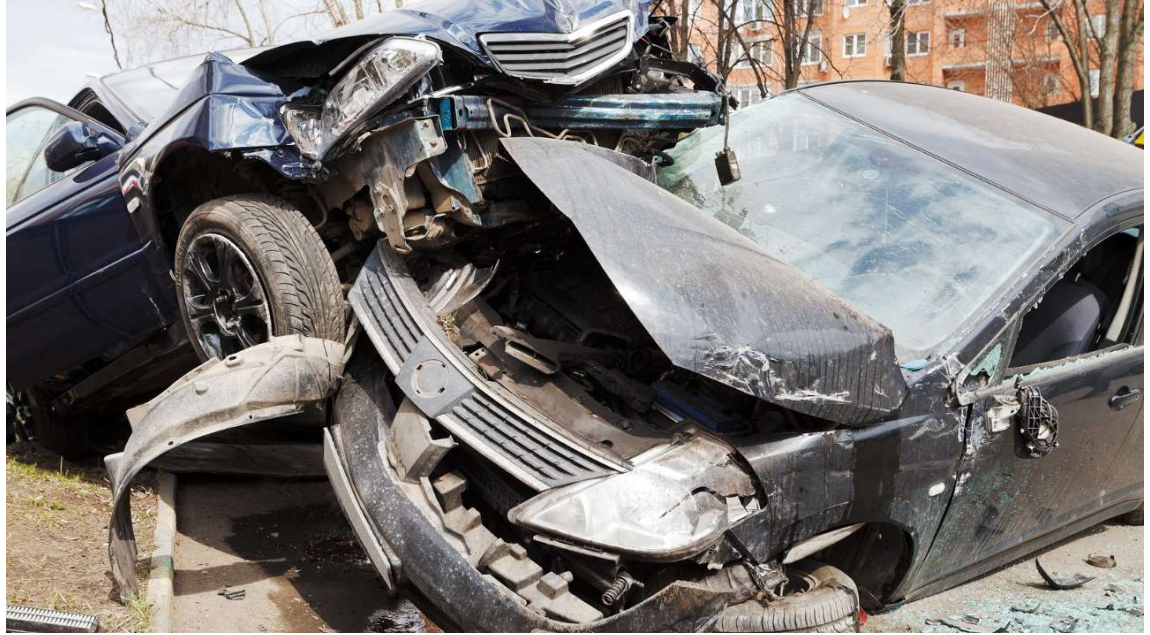
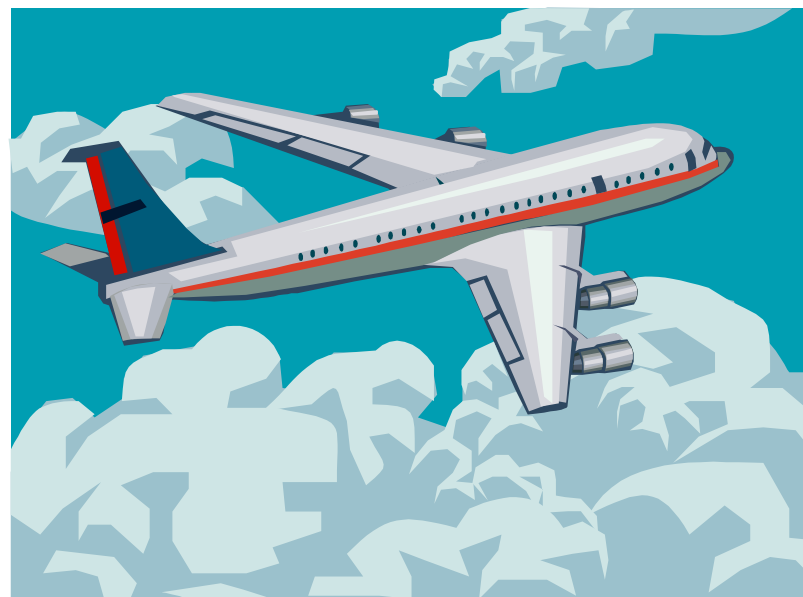Is IT potentially life threatening?

IP3

Recipe for increasing confidence

Ingredients

- Competence
- Ethics
- Continuous professional development

Method

1. Exercise proper judgement
2. Choose your provider
3. Ensure privacy & security
4. Value professionalism
5. Demand action from leaders

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