The Future ICT Professional

What makes a professional
What skills do you need for the future?

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www.ipthree.org
Topics

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

Knowledge

Competence

Skills

CORE VALUES

INTEGRITY

ETHICS

ACCOUNTABILITY

PRINCIPLES
## 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

<table>
<thead>
<tr>
<th>Governance</th>
<th>Influencers</th>
<th>Infrastructure</th>
<th>PD &amp; Education</th>
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<tr>
<td>Organizational Capacity</td>
<td>Code of Ethics</td>
<td>Disciplinary Process</td>
<td>Initial Education &amp; Training</td>
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<td>Mission &amp; Objectives</td>
<td>Standards of Practice</td>
<td>Accreditation</td>
<td>Competency Development</td>
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<td>Professionalism Strategy</td>
<td>Body of Knowledge</td>
<td>Assessment</td>
<td>Certification credentials</td>
</tr>
<tr>
<td>PSB &amp; Compliance</td>
<td>Competency Framework</td>
<td>PD Strategy &amp; Capability</td>
<td>Certification</td>
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</table>
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.
The glue that holds it all together
"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
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.”
4th Industrial Revolution

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

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

<table>
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<tr>
<th>Today, 2018</th>
<th>Trending, 2022</th>
<th>Declining, 2022</th>
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<td>Analytical thinking and innovation</td>
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<td>Manual dexterity, endurance and precision</td>
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<td>Complex problem-solving</td>
<td>Active learning and learning strategies</td>
<td>Memory, verbal, auditory and spatial abilities</td>
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<td>Critical thinking and analysis</td>
<td>Creativity, originality and initiative</td>
<td>Management of financial, material resources</td>
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<td>Technology design and programming</td>
<td>Technology installation and maintenance</td>
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<td>Reading, writing, math and active listening</td>
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<td>Attention to detail, trustworthiness</td>
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<td>Management of personnel</td>
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<td>Leadership and social influence</td>
<td>Quality control and safety awareness</td>
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<td>Systems analysis and evaluation</td>
<td>Technology use, monitoring and control</td>
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Future Skills

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

Social Intelligence

- Unlearning
- Computational sense
- Contextualised intelligence

Learning How to learn

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

Creativity Mindset

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

AI & Blockchain

Source: Artificial Intelligence: 101 Things You Must Know Today About Our Future, Lasse Rouhiainen
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
The skills you need are the things I can’t do!
Benefits of Professional Development

- Education only
  - No place in 21\textsuperscript{st} 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
GDP Growth
Sustainable Economic Development
Drive innovation
Is IT potentially life threatening?
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
THANK YOU

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