

WIPO
ICT Leadership
Dialogue
(WILD)

Digital Transformation in the Intellectual Property Office *(Human Perspective)*

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Digital Transformation in IPO - Goals

- Process of adopting modern IT technologies to create new business models to significantly enhance existing service delivery
- Provision of the advanced customer experience, inline with e-Government
- Empower data-driven informed decision making

Digital Transformation - Landscape

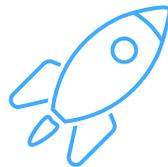
- **Subject:** Who is in charge, with which skills?
- **Object:** What do we actually transform? How to prioritize?
- **Place:** Where is it happening?
- **Method:** How to act? Which tools are essential?
- **Timeline:** When to start? How Fast? When to hold on or step back?
- **Anthropology:** Digital wellbeing - Where are the limits?

DT@IPO> Subject: Internal staff

■ Internal IPO staff

- Restricted attractiveness of the hi-tech career in the public service
- Examiners, experts in the business domain, may advance IT skills and become the major agents of change in the digital transformation
- Multiskilled personal becomes a necessity
- Permanent education, mastering advanced IT skills, however...

Is it really
feasible &
sustainable?

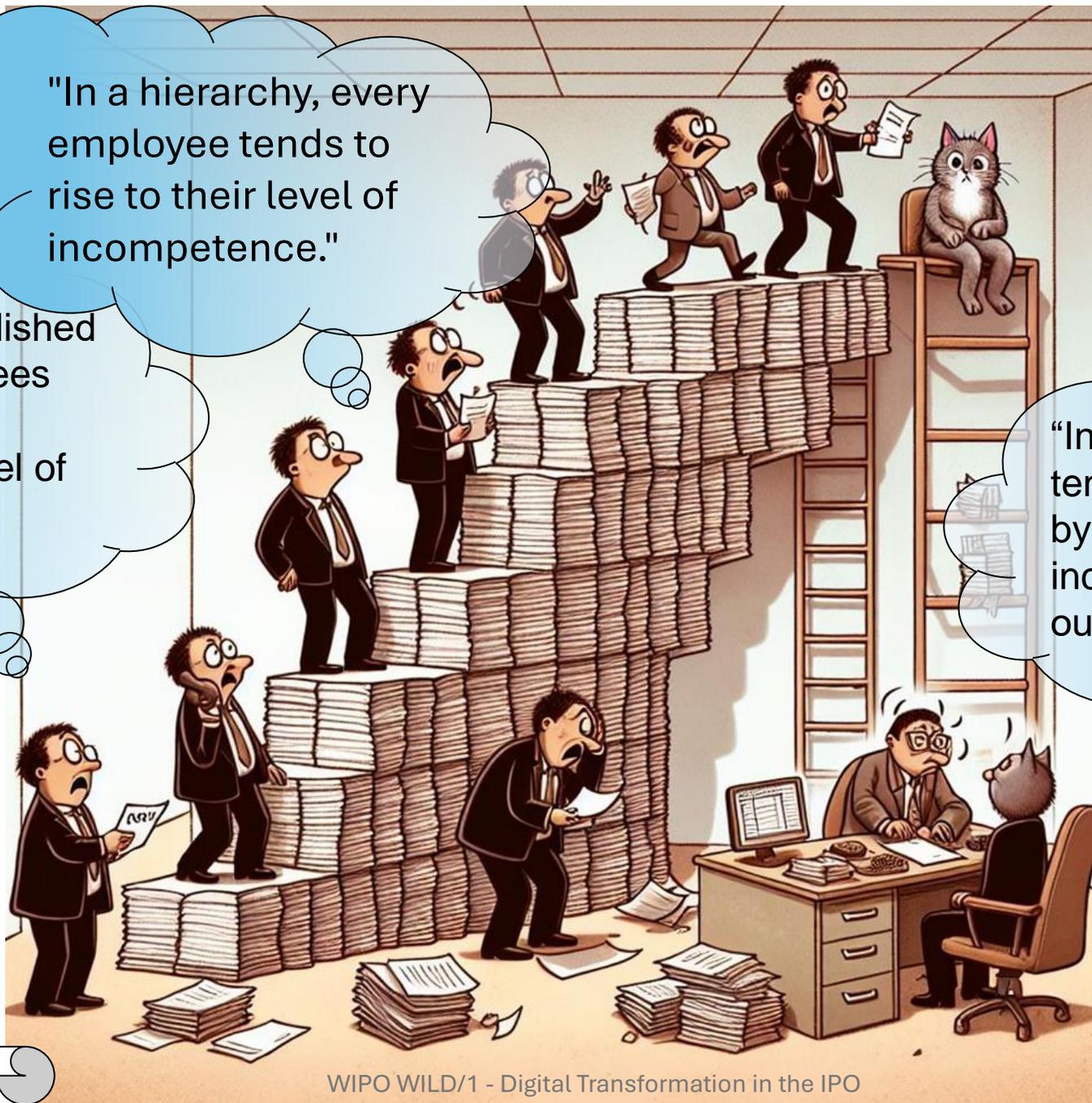


Laurence J. Peter, The Peter Principle: Why Things Always Go Wrong

"In a hierarchy, every employee tends to rise to their level of incompetence."

"Work is accomplished by those employees who have not yet reached their level of incompetence."

According to the Peter Principle, when people reach their 'level of incompetence', it is not because the required skills in the new position are **more difficult**, but because they are **different**.



"In time every post tends to be occupied by an employee who is incompetent to carry out its duties."

Technology may follow the similar rule

** Illustration created by:
Microsoft Copilot*

DT@IPO> ICT Labor market

■ The example from one developing country

- Steady rise in the overall local IT market value
- 90% of the current IT graduates find employment in the foreign companies
- 75% IT employees deliver services to foreign market
- IT staff employment intensity in local non-IT companies decline
- The companies, industry, public service remain underdeveloped
- System integrators take over

DT@IPO> Transform What?

- **IPO Organization mission:** IPR granting bureaucratic office → innovation catalyst
- **IPR search and retrieval:** automated (pre-)classification, translation, summarization
- **IPR protection object:** Computer-related inventions, digital art/publishing/marketing
- **Legislative and business procedures:** e-Government concept
- **IPR Data:** Document/data formats compliant with IPR standards for data exchange
- **Digital tools:** Computer hardware/network/software
- **Customer/user experience:** Automate routine tasks, provide multi-level assistance

DT@IPO> Place – Spatial

- **Network infrastructure & security:** Reliable internet connectivity
- **Databases & Applications server hosting:**
 - IPO server room → [gov/commercial] **cloud datacenter** [local/abroad]; (physical → IaaS)
- **Working place transformation – client equipment devices:**
 - IPO (desktop), WFH (notebook), Work from everywhere (mobile)
- **Collaborative space transformation**
 - Physical → Online { unstructured → structured }
 - Local/intnl.IPO → Online { a/v call → chat → whiteboard → kanban →... }

DT@IPO> Methods / Rules

- **Regulatory:** Local e-government legislative – trusted services, e-documents/signature/payments
- **Business procedures:** comprehensive business modeling/reengineering
- **Standards:**
 - Management system standards (*ISO 9000, 27000*)
 - IPR specific
- **Competence assurance:** Training, certification
- **Technology debt management:** Foundation for the steady progress

DT@IPO> Methods / BPM & Analytics

■ Business process modelling concept to IPO staff:

- Approach BPM concept to IPO staff
- Complexity of general-purpose BPM tools and notations (BPMN)
- Extensive usage of specialized modeling tools, like Ipas Designer

■ Data analytics: Identifying trends: operational effectiveness; IPR enforcement

■ Visualization: Process workflow diagrams, systems interconnection schema

DT@IPO> Methods / Technique

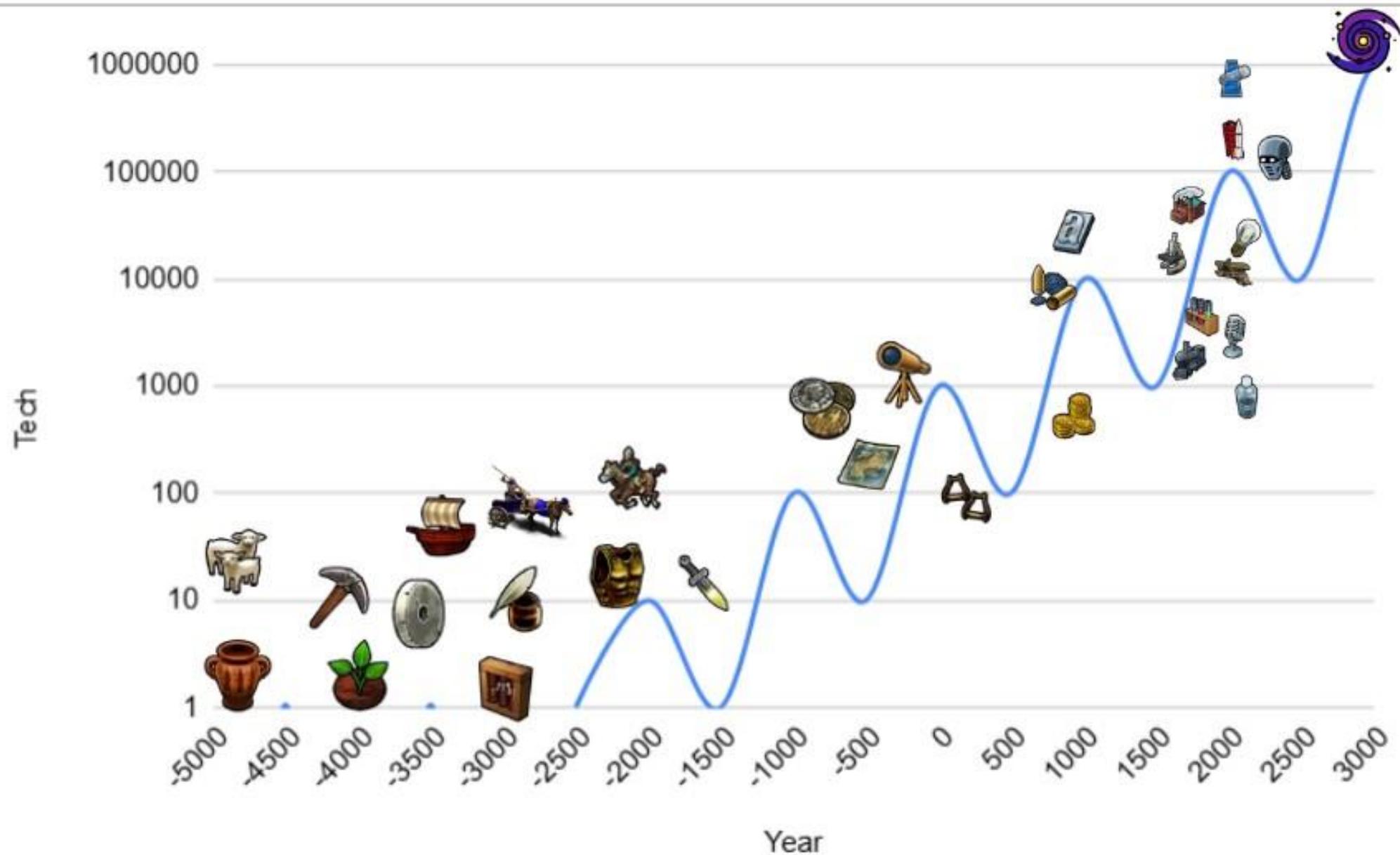
- **Existing systems:** Most IP offices already use integral back-office system, like WIPO IPAS, which were designed primarily to automate IPR grant and post-grant procedure
- **Customer-centric approach:** Consider various aspects of external user activities
- **Software development:** ... → Agile → TDD (test-driven design) → Low-code (Codeless?)
- **Programming:** Traditional coding (imperative: how program function step by step)
→ Prompt engineering for generative AI creator (declarative: what is desired outcome)
- **AI technologies:** Adapt available tools for the IP services, machine learning/training

DT@IPO> Methods / Technique

- **Software deployment:** ... → DevOps / “Serverless“ (fully managed platform)
- **DevOps approach:** Deployment process automation integrated into program
- **Multi-cloud :** Vendor independence introduce additional layer of abstraction
- **Local e-Government solutions:** Consider best practices in other public institutions, available licenses, government cloud platforms
- **Generalization:** As the focus of the IPO missions extends, the software solutions also converge to general purpose

Digital Transformation - Timeline

- **Rapid pace of change: unimaginable in the history (Internet, AI, Big data)**
- **When to introduce new tech?**
 - Level of tech maturity for the given purpose; impact to user experience
 - Technology excels in up-scaling but fail in down-scaling, exceptions handling
- **When to abandon legacy tech?**
 - Significant business practice change; platform support expiration; security
- **Fundings dynamics:** Capital investments ↓ ■ Operational costs: ↑ ↑



Source: https://en.wikipedia.org/wiki/File:Tech_history_timeline.jpg

Digitalization imperative

■ Tyranny of urgent:

- Necessity to fully digitalize all activities, meaning discard paper and decrease body movement other than clicking on the keyboard and mouse while looking to screen
- Permanent connectivity and information overflow
- Assure competitiveness, productivity, effectiveness

■ Language depletion:

- Growing need for the proficient fluency for precise expression and revision of complex concepts, opposite to ongoing decrease in quantity of frequently used words

Digital wellbeing - Where are the limits?

■ Research results:

- Real multitasking is not possible for non-automated tasks, the brain just quickly redirects from task to task, spending resources on the context change
- Attention span decline, while hi-tech tools operations may demand deep focus
- Better recall while reading from paper than screen & writing notes than typing on the laptop
- The brain connects screens with distractions and shallow focus
- Human nature not adapted to sedentary lifestyle and cannot for many generations
- Intellectual meltdown: IQ decline from the latest decades, opposite to steady growth before

Reference: Log-out your brain, Andres Hansen

Q & A

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* Illustration creation assisted by Microsoft Copilot

Appendix: Where is my smartphone?

- **Experiment setup:** Scientists measure students exam test outcome, depending on the position of their smartphone: on the table / in their bags / in another room
- **Conclusion:** The worst results: phone on their desk; the best: in another room
 - (However, if the smartphone is lost, the students may have far worse results)
 - The interpretation: ignoring smartphone is an active effort, since we expect numerous notifications and frequently ask for assistance from the apps
 - The effect is stronger for students who are more smartphone dependent

Reference: Log-out your brain, Andres Hansen