



# Digital Transformation for IP Offices

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# Outline

- Introduction
- Digital Transformation and IP Offices
- Key Technologies for IP Offices
- Framework for Digital Transformation
  - Regulatory Dimension
  - Operational Dimension
  - Technical Dimension
- Development Perspective
- Future Priorities

# Introduction

## ■ New Environment

- ❖ The Fourth Industrial Revolution (FIR)
- ❖ Technology-driven, technology impact society
- ❖ Significant infrastructure improvement
- ❖ Online, responsive and Modern process

*“Digital transformation is the process of **adopting** modern IT technologies such as cloud computing, IoT, artificial intelligence, and **integrating** these into business processes to create new business models or to significantly enhance existing service delivery.”*

# Digital Transformation and IP Offices

- IP offices are impacted by the fourth industrial revolution and by digital transformation into two important ways:
  - ❖ As an **enabler**, the IP office needs to provide the services that meet the needs of new industries and new applicants.
  - ❖ As an **example**, the IP office can demonstrate how digital transformation can be applied to government services to create customer-focused, efficient and effective service delivery.

# Key Technologies for IP Offices

- Cloud Computing : hundreds of data centers world-wide for platform-level services and software services
  - ❖ *Service delivery.* New services can be delivered much more quickly.
  - ❖ *Resilience.* Cloud IT infrastructure can be configured so that it recovers automatically in case of an incident (e.g. server crash)
  - ❖ *Security.* Extremely secure much more effectively than the equivalent in-house systems.
  - ❖ *Cost effectiveness.* Cloud IT infrastructure can be at least 20% cheaper than in-house data centers

# Key Technologies for IP Offices (2)

- Artificial Intelligence: recently achieved major progress due to the convergence of two new innovations – learning algorithms and massive computing power (1 billion times cheaper!!!)



# Key Technologies for IP Offices (3)

- How does AI impact the work of IP offices?
  - ❖ *Classification services* → one of the fundamental applications of AI and so this technology can be relatively easily applied to IP classifications, including classification of images.
  - ❖ *Translation services* → The multi-national and multi-lingual nature of the IP system make it necessary for documents to be translated between many national languages.
  - ❖ *Search services* → AI can enable new search techniques, such as semantic and **context-aware search** to enable retrieval of documents that are similar to a source document.

# Key Technologies for IP Offices (4)

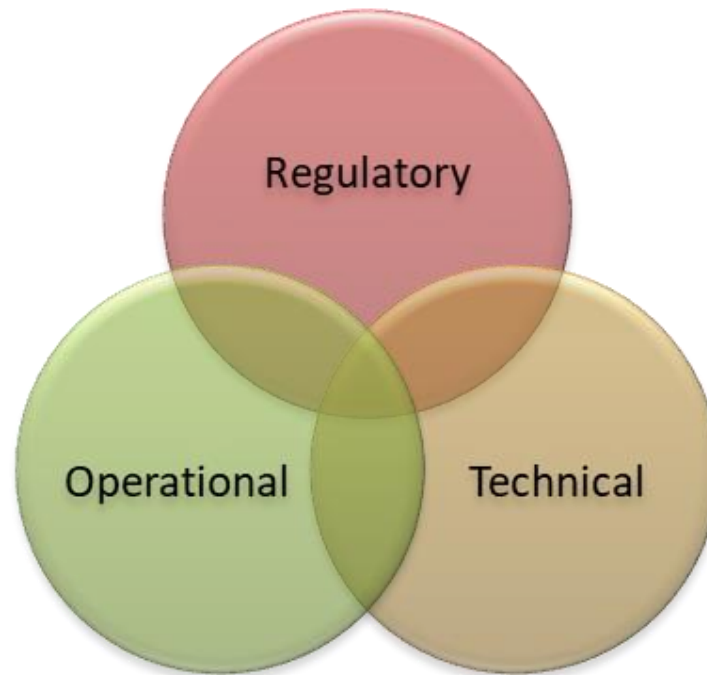
- Some guiding principles for the adoption of AI technologies by the IP community
  - ❖ *Re-use, not re-invent*
  - ❖ *Collaborate in the creation of AI tools, to reduce the duplication of effort*
  - ❖ *Tools be shared and made available as “public good” resources*
  - ❖ *Tools be developed with open interfaces*



# Data Analytics

- May be used to improve IP office management by measuring business processes and establishing performance indicators
- To understand trends in the IP system
- Requires skilled resources and large amounts of data

# FRAMEWORK FOR DIGITAL TRANSFORMATION



# Regulatory Dimension

- At least four aspects of the regulatory framework that need to be reviewed and potentially adapted to enable digital transformation
  - ❖ Electronic records and transactions
  - ❖ Electronic payments
  - ❖ Reform paper-based procedure
  - ❖ Sustainable funding models

# Operational Dimension

- The operational dimension covers the management processes of the IP office and should be used to create efficiently managed processes that fully take advantage of the online tools.
  - ❖ Digitize business processes
  - ❖ Customer-focused service delivery
  - ❖ Quality metrics and quality processes
  - ❖ Multi-skilled staff

# Technical Dimension

- The core of the technical dimension of IP office digital transformation is, of course, the IT systems that support the office.
  - ❖ Cloud Hosting
  - ❖ Artificial Intelligence
  - ❖ Data Analytics
  - ❖ International & Regional Cooperation
  - ❖ International Standards

# Development Perspective

- New possibilities of digital transformation offer the opportunity to IP Offices in developing countries
  - ❖ Patent and trademark applications have grown faster in lower-middle-income countries than in high-income countries (36% vs 9.4% growth in patents, 79.5% vs 36% growth in trademarks) – *WIPO Statistics Database*
  - ❖ Applications from residents are significant for trademarks and designs, and are growing quickly for patents.
  - ❖ Increasing demand coming from users who are becoming more sophisticated and having **high expectations** on efficient online government services

# Future Priorities

- Particular challenges to be addressed to fully realize the benefits of digital transformation in developing country IP offices:
  - ❖ Personnel skills
  - ❖ Internet connectivity
  - ❖ Funding models

**Thank you**