

Artificial Intelligence and Digital Economy **Challenges and Prospects**

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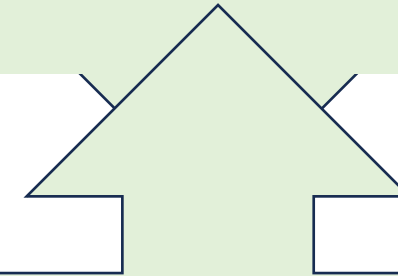
Objectives of the Paper

- Enable participants understand the concept of Artificial Intelligence and Digital Economy
- Understand the concept of Tax Technology
- Unveil the impact of Tax Technology
- Roll out some tax issues from Digital Economy
- The challenges and prospects of artificial intelligence and digital economy
- Expectations from newly inducted Tax Practitioners in the world of emerging technology
- Closing thoughts and advise.

Introduction

The dynamic nature of the world systems and the continuous emergence of new technological tools, innovation, the automation of processes is viewed by many stakeholders as a paradigm shift to the new ways of doing business. The evolution in the Artificial Intelligence (AI) usage has radically affected the business models, the new balance between labour and capital, and the re-organisation of work. The development of robotics and AI technologies in the environment are profoundly affecting both how the value is created and how the work is performed.

In this same vein, digitalisation and the process of globalisation has transformed the global economy. The unprecedented growth in IT, mobile internet penetration, cloud technology, internet of things, AI, machine learning, next genomics and advance materials, advanced robotics and autonomous, 3D printing has driven businesses and stakeholders to move very quickly along with the emerging trend.

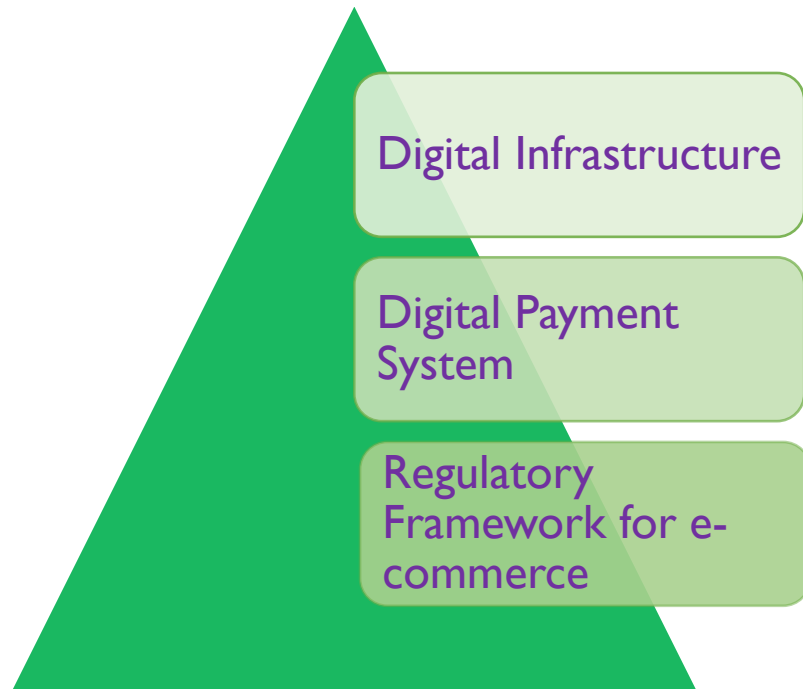


This invariably poses a challenge to professionals, who are in the advisory and consultancy profession, including tax practitioners. This paper seeks to unveil the impact of the new waves in technological advancement and arouse the consciousness of the newly inducted tax professionals to upscale their skills, in order to adapt into the new world realities.

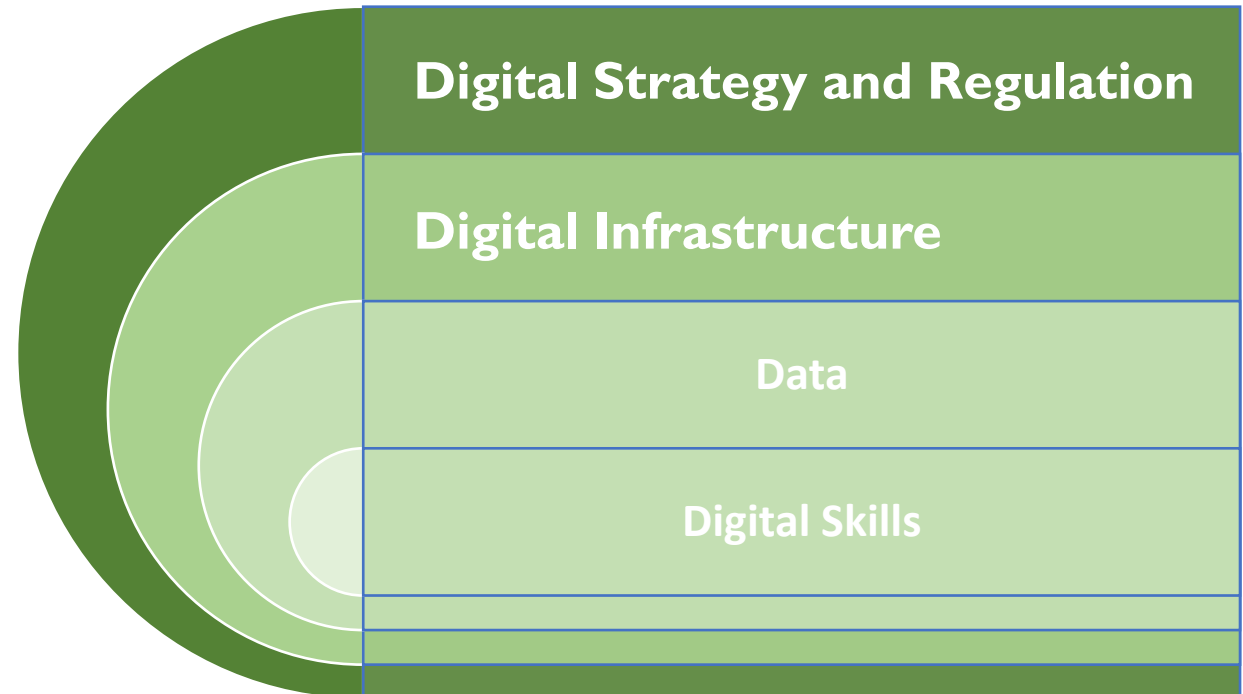
Digital Economy

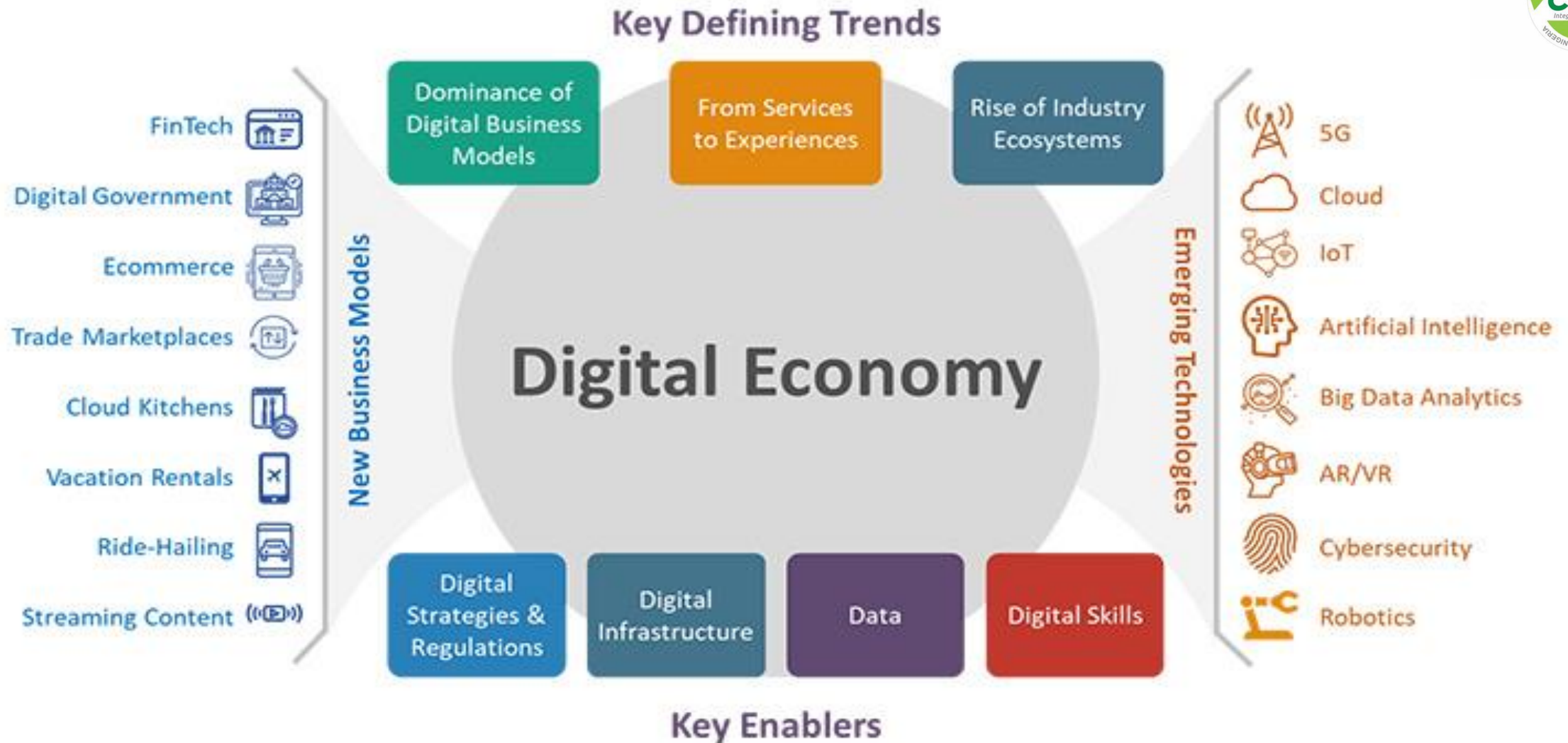
According to the latest definition from the Organization for Economic Co-operation and Development (OECD), **the digital economy** encompasses all economic activities reliant on, or significantly enhanced by, the use of digital inputs, including digital technologies, digital infrastructure, digital services, and data.

Digital economy is built on three pillars



The four enablers of Digital Economy





Concept of Artificial intelligence Defined

Artificial intelligence refers to the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

It can also be defined as the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Theory and Practice of Modern Technology

Multiple disruptions, including regulatory, social, political and technological changes, are posing newer risks and opportunities for businesses, more so for tax functions, which are at an inflection point. However, tax law changes are struggling to keep pace with technological changes and new laws are increasingly being enforced. Not giving tax the attention, it deserves on digital issues could increase the risks for organizations.

Tax-specific technologies may make it possible to answer the mandates of the global digital economy with changing tax data flows, data analytics and data requirements. The new digital tax function might evolve at great pace to become a strategic component of enterprise transformation.

Tax Technology

Tax Technology is the intersection between tax, process and technology.

Tax professionals and practitioners are faced with the current reality. Please note that there are specialist solutions that have been developed to perform certain tasks for computing tax returns for CIT, VAT PAYE, capital allowance, transfer pricing, generic tools for data manipulation,

The new age is driven by technology and automation. It is imperative to state that the new tax function will be anchored and leveraged through data analytics.

Key trends impacting Tax functions

Digital Tax Administration

Tax Authorities going digital:

Technology wave -

Emergence of new technologies and businesses adopting digital strategy

Transforming Tax policies

- Evolving legislative landscape demanding increased transparency and compliances

Tax Authority Digitalisation Maturity levels Table



Level 1 “E-File”	Level 2 “E-Accounting”	Level 3 “E-Match”	Level 4 “E-Audit”	Level 5 “E-Assess”	Level 6 “E-Government”
Use of standardized electronic form for filing tax returns required or optional; other income data (e.g., payroll and financial) filed electronically and matched annually	Submit accounting or other source data to support filings (e.g., invoices and trial balances) in a defined electronic format to a defined timetable; frequent additions and changes at this level	Submit additional accounting and source data; government accesses additional data (bank statements) and begins to match data across tax types, and potentially across taxpayers and jurisdictions, in real time	Level-2 data analysed by government entities and cross-checked to filings in real time to map the geographic economic ecosystem; taxpayers receiving electronic audit assessments with limited time to respond	Government entities using submitted data to assess tax without the need for tax forms; taxpayers allowed a limited time to audit government-calculated tax	All government interaction with citizens and enterprises digitalized; seamless international digital exchange of information between law enforcement and tax authorities in different countries

The evolution of Artificial Intelligence (AI)



The evolution of AI is dated back to 1940s when philosophers attempted to describe the process of human thinking as the mechanical manipulations of symbols. However, modern AI has its origin when scientist like Alan Turing and Marvin Minsky began to conceive the idea creating machines that can think and learn like humans

As early as the 1970s, tax law had been selected as one of the domains where first applications of knowledge-based systems were developed. These were “expert systems”, end-to-end software that would operate using a “knowledge base”, a set of specialised information relevant to the particular domain, and inferential engine (procedural algorithms) that enabled the system to solve the problems connected to its task.

As of the 2000s, **AI** research started to build systems from a great quantity of raw data. Based on such data, the systems themselves can construct implicit knowledge and apply such knowledge to new cases. These developments have been enabled by great advancements in probabilistic theories and statistical models, and by the increasing proliferation of machine learning research. This has led to a number of successful applications in many sectors—ranging from automated translation to industrial optimisation, marketing, robotic visions, movement control, etc.—

Functions performed by AI in Financial Sector & Tax Functions



Tax operations managements

Document management

Process management & control

Management of Income & reporting

Tax accounting, reporting & Group reports

Data ollection, analysis and litigation management

Tax calendar and monitoring

Data support for TP compliance

Examples for AI enabled Tax solutions

Taxman I and
Taxman II

The system, developed to test the consequences of certain corporate reorganisation transactions, bookkeeping, accounting, tax returns etc

Tax Advisor

Online Tax consultant, tax agent, tax store, tax calculator etc.

Expertax

is a safe cloud-based tax computation system that helps you to address the challenges faced by the current process using cutting edge technology.

Modern Tax
Machines &
solutions

- **Predictive Analytics (PA)** AI and machine learning algorithms are used to extract patterns from large amount of data and to make predictions and assessments for different tax purposes,
- **Natural language Processing (NLP):** This provides techniques to program computers so that they can process and analyse large amounts of natural language data (including complex legal texts such as contracts, treaties, legislation, judgements) and give responses that humans can easily understand.
- **TaxRobots:** Automate R&D tax credits to assist Tax professionals advice their clients
- **Blockchain:** Providing secured ledgers for real-time insights in financial transactions and management

Current live examples

KPMG has reported using IBM Watson to help clients secure R&D credits. With the application, users can upload thousands of documents and analyse structured and unstructured data at rapid speed to help identify projects that are eligible for credits, using NLP to understand the economic context.

In Belgium, Deloitte has developed a chatbot that is capable of providing first-hand EU VAT advice, taking into account the place of supply rules, exemptions, domestic rates, etc. Chatbot applications, powered by NLP and machine learning, are said to profoundly affect the accessibility for taxpayers to the law.

Tax issues arising from Digital Economy



As a result of the tax challenges associated with digitalisation of the economy, the following tax issues may arise:

Corporate tax Issues

- Physical presence
- Taxing right and nexus issues
- Tax avoidance

Proposed solution

- a. Consensus Solution- Pillar 1 & Pillar 2 solutions
 - **Pillar 1** – Nexus and profit allocation to market jurisdiction
 - ✓ Scope: Turnover of 20 billion Euros, profitability of 10%,
 - ✓ Allocation of profit: if euro 1 million Euro, 250,000 with GDP of less than 4 billion euros
 - **Pillar 2**- Global Minimum Tax of 15% to protect tax bases of respective countries:
 - ✓ **Top-up tax**: excess over 15% minimum tax to be taxed on MNEs
- b. Unilateral approach
 - Digital Service Tax- European Union, Kenya etc
 - SEP- Nigeria, India etc.

Consumption Tax Issues-Value Added Tax

- Tax evasion and avoidance
- Non-taxation
- Under-tax

Proposed solution

- Self charge- Business to Business (B2B)
- Simplified Registration and Compliance Regime- Business to Consumer (B2C)

Challenges of Artificial Intelligence and Digital Economy

Sophisticated

Automated processes

Tax accounting
functions

Profit allocation

Loss of employment
and jobs

Legal challenges

Fairness and
transparency

Accountability and
oversight

Data privacy issues

Cybersecurity and
others Security
concerns

Lack of organisational
change management

Lack of expertise

High costs and Budget
constraints

Upskilling and
recruitment

Tax evasion and Tax
avoidance

Taxing right issues

Prospects of Artificial Intelligence and Digital economy

For Tax Practitioners

- Accurate Data
- Error reduction
- Predictive Analysis
- Reduce Tax Burden and Stress
- Diagnostics Improvement analytics
- Accurate Forecasting
- Real insight to customer behaviour
- Tax technology evolution

Taxpayers

- Increased efficiency and cost-effectiveness
- Enhanced tax law cognition
- Tax accounting
- Tax requests and case predictions
- Labour cost reduction
- Fair market share of profit
- Protection of market base

For Tax Authorities.

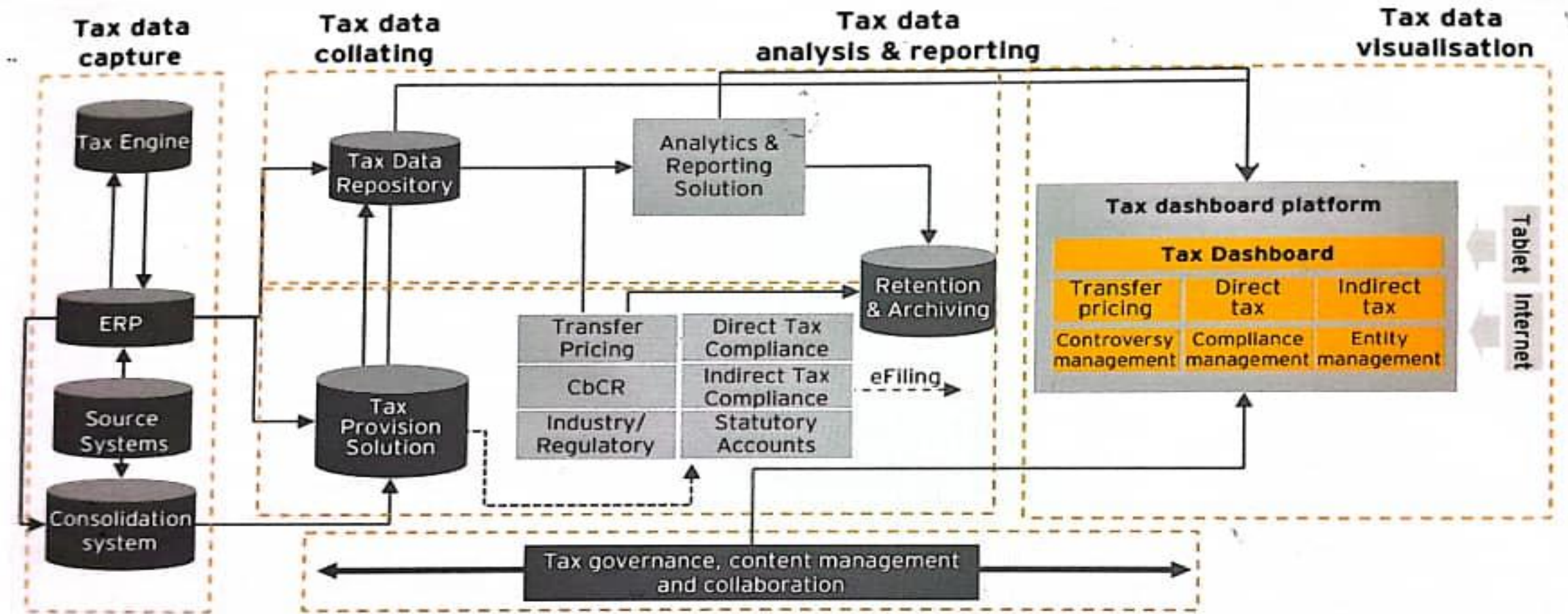
- Automation of processes
- Tax audit and fraud detection
- Detect fraud and aid investigation
- Tax collection
- Tax Policy evaluation

Other benefits of Digitalisation to Businesses



- i. Faster revenue Growth,
- ii. Faster profit margin
- iii. Higher productivity and innovation
- iv. Cross border data flows surging and connecting more countries, companies and people.
- v. Businesses and entrepreneur
- vi. Market platform emerging
- vii. Society at large

The Future of Tax Technology

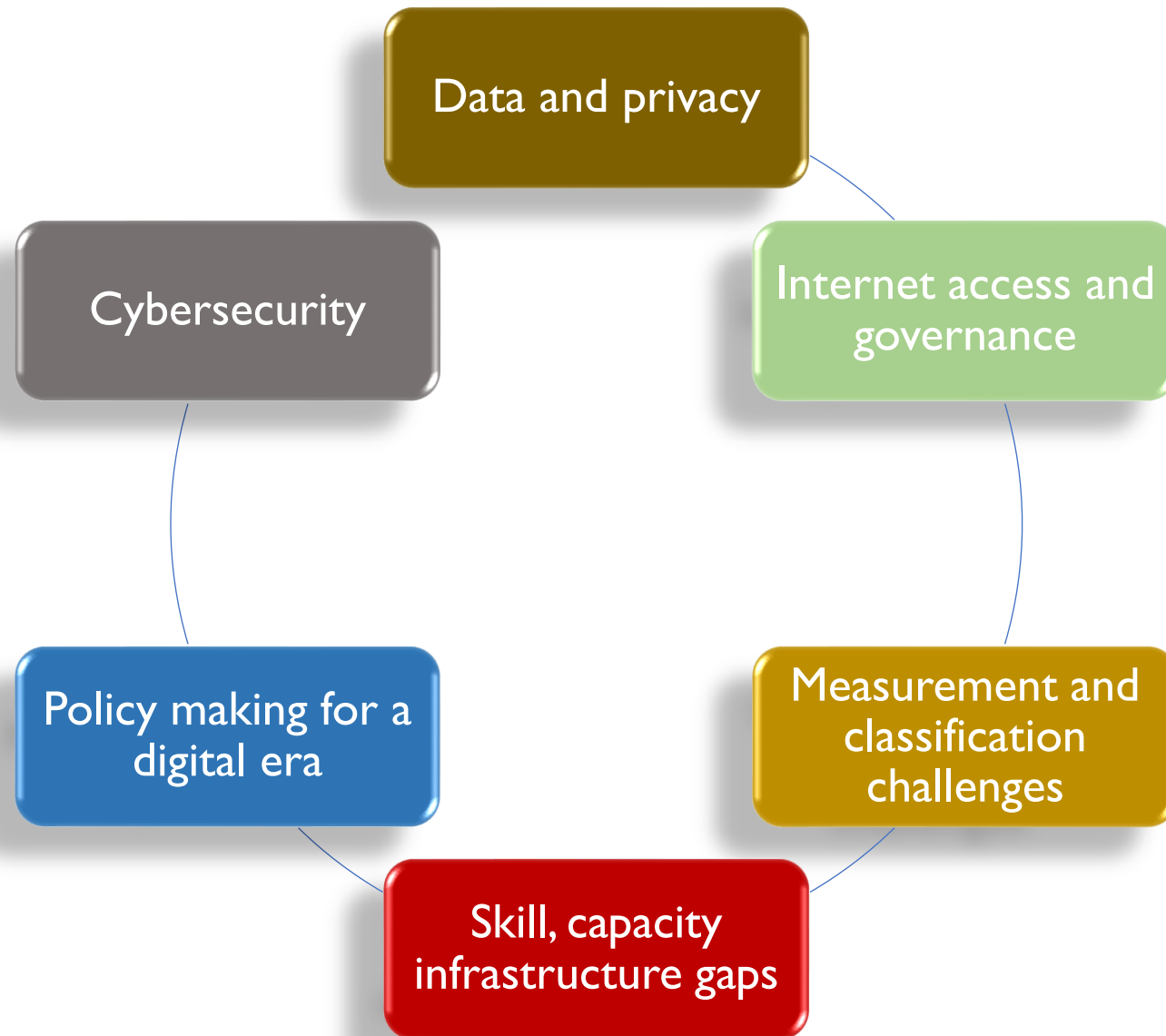


Expectations from Chartered Tax Professionals



- 1 • **Capacity Building:** Enhance capacity building through automated processes in tax consulting and advisory
- 2 • **Efficient Service:** Help to prepare efficient service to your clients
- 3 • **Knowledge based research:** Helps to be well positioned to provide superior services to client remain competitive in today's marketplace
- 4 • **Invest in training:** TP are required to learn the use AI tools effectively
- 5 • **Invest in Knowledge based value-added:** They encouraged professionals to stay informed about AI developments and be prepared to adapt their businesses to leverage the benefits of AI technology;
- 6 • **Investment in tax technology:** Tax Professionals are required to invest in technology
- 7 • **Develop a Tax strategy:**
- 8 • **Technology Strategy:** Develop a holistic tax technology strategy and roadmap
- 9 • **Tax technology strategy,** best fit solutions, review and improvement
- 10 • **Invest in Enterprise systems:** Tax data hub-tax application, tax data analytics & business intelligence-deliverables

Advice to client: Lay Foundation to get it right



Conclusion

The evolution of technology, digitalisation, the new waves of modern technology including AI, has greatly affected the traditional ways of doing business globally.

Tax authorities are increasingly becoming digital and getting closer to the source data to better understand taxpayer trends and ensure better compliance Tax. It is therefore imperative for tax professionals who are still glued to bricks and mortar approach to change their mindset and move with the emerging trend in taxation. It is a clarion call for the newly inducted Tax Practitioners to embrace the new technology and invest in learning and research on the new process and the value chain that put into question traditional tax legal concepts.

Tax Practitioners should be deliberate in investing in knowledge-based applications and solutions to be relevant in this contemporary times.

CASE STUDY

- Artificial Intelligence technology outlay
- Digital Economy: Corporate Tax and VAT scenario

