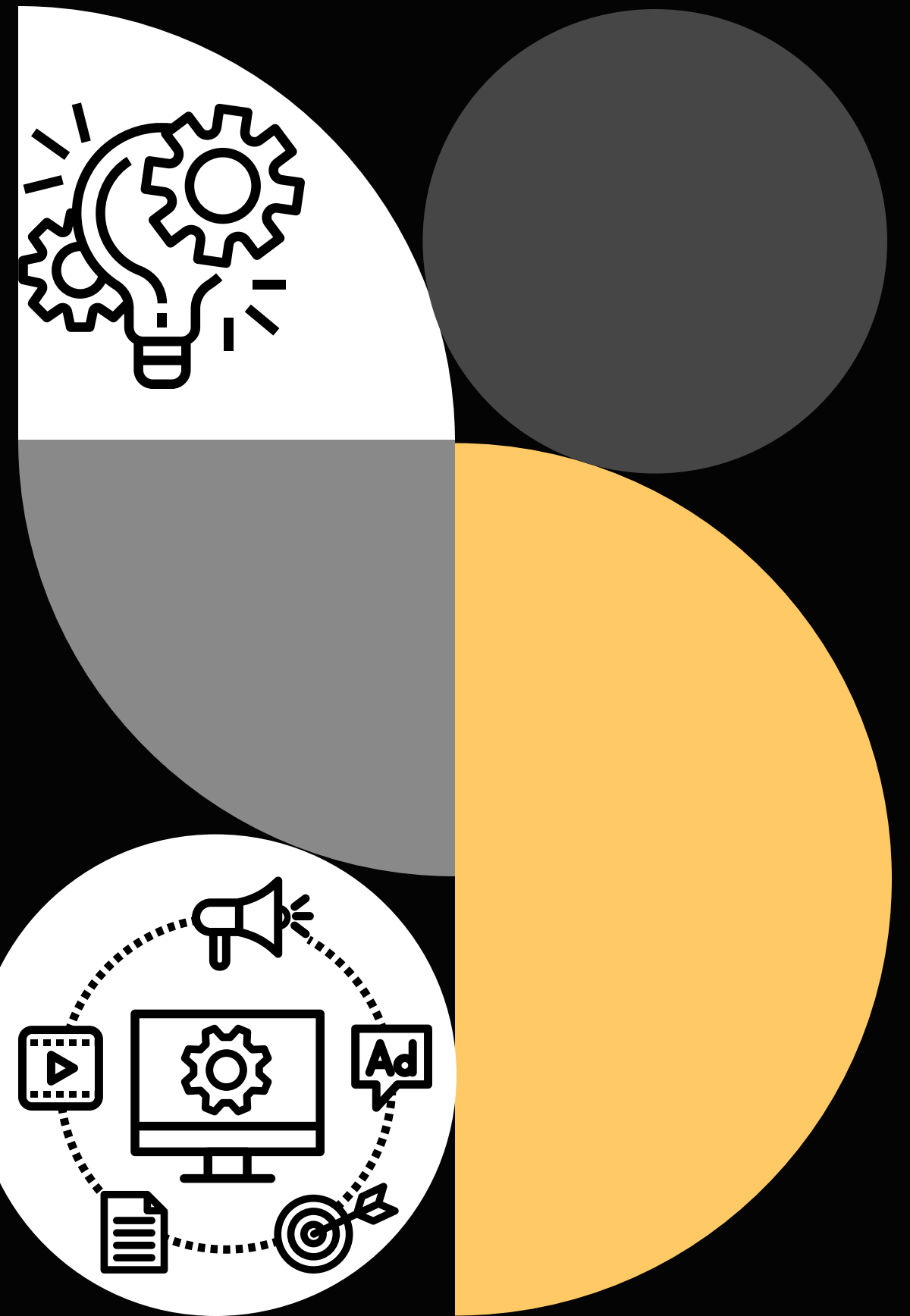


Innovation and Digital Transformation in the University System

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1-Day Colloquium for Provosts, Deans & Directors, Federal University, Lafia

HouseKeeping

- Protocol
- Caveat
 - Timing & Scheduling Conflict
 - KYC: naturally the website
 - Practically no information about the audience



Outline

- Housekeeping
- Introduction
 - The core pillars of the university system
 - Innovation and Digital Transformation Nexus
- Drivers of Digital Transformation
- Key Areas of Innovation in the University System
- Implementation Challenges
- Digital Transformation and The FULafia Ranking
- Recommendations (General and Specific)
 - The TAU Experience
- Conclusion



The Core Pillars University System

- Teaching
- Research
- Community Service/Impact

However, the university system worldwide is experiencing a paradigm shift not only the integration of technology into existing processes but also fundamental changes in how knowledge is created, disseminated, and accessed within academic institutions.



How can the university system leverage on Innovation and Digital Transformation to deliver on these mandates

Innovation and Digital Transformation and the 3 Pillars of the University System

- Teaching:
 - Enhanced Learning
 - Technology through digital transformation can innovate teaching and learning: personalize learning experiences, provide access to diverse resources, and foster collaboration among students.
- Research
 - Improved Research
 - Digital tools accelerates research breakthroughs, facilitates data analysis, and enable global collaboration.
- Community Service
 - innovation and digital transformation enhances university community service through integrated platforms that enable virtual service delivery, data-driven impact measurement, and broader community engagement.
- Operational Efficiency
 - Automation and digital processes can streamline administrative tasks, improve resource allocation, and enhance communication.

The Innovation-Digital Transformation Nexus



- **Symbiotic Relationship:** Innovation drives the adoption and adaptation of digital technologies, while digital transformation creates new opportunities for innovation.
- **Three (3) key dimensions in the relationship**



Process Innovation

- Digital transformation enables the redesign of educational processes, administrative workflows, and research methodologies, leading to improved efficiency and effectiveness.



Product Innovation

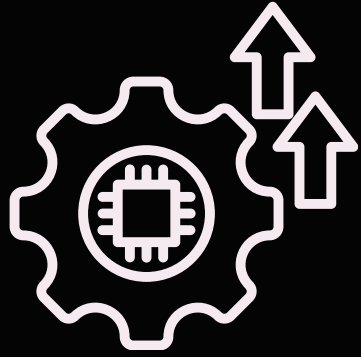
- Digital technologies facilitate the creation of new educational products and services, including online courses, digital research tools, and virtual learning environments.



Business Model Innovation

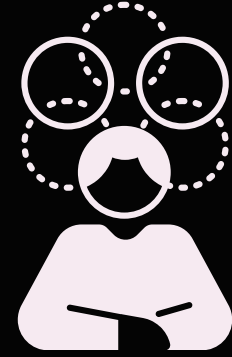
- Digital transformation enables universities to develop new ways of delivering value, such as hybrid learning models, digital research collaborations, and innovative revenue streams.

Drivers of Digital Transformation



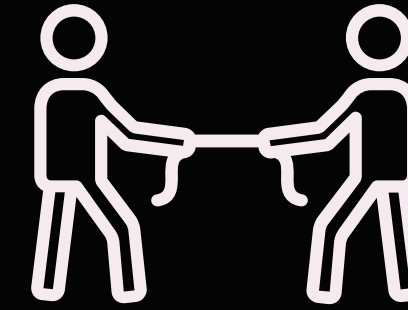
Technological Advancements

- The rapid evolution of digital technologies, including artificial intelligence, cloud computing, and big data analytics, has created new possibilities for educational delivery and institutional management. These advancements enable universities to offer more personalized learning experiences and improve operational efficiency



Changing Students Demographics

- Modern students, predominantly digital natives, expect technology-enhanced learning experiences. Their familiarity with digital tools and preference for flexible learning options has accelerated the adoption of digital solutions in higher education.



National and Global Competition/demands

- Universities face increasing competition for students, faculty, and research funding on a global scale. Digital transformation offers opportunities to expand reach, enhance reputation, and improve competitive positioning through innovative programs and services.

Key Areas of Innovation & Digital Transformation in the University System:

- Teaching and Learning
- Research and Knowledge Creation
- Administrative Operations

Teaching and Learning

- Hybrid delivery models that offer flexible learning through combining traditional and digital methods.
- Learning Management Systems (LMS) that facilitate course delivery and student engagement e.g. Moodle
- Microlearning and credentials via Massive Open Online Courses (MOOCs) e.g. Coursera, edX, Harvardx, TAUx -community impact
- Artificial intelligence-powered tutoring systems across different subjects (from teaching to assessment and results -including thesis): chatGPT, Claudai, Canva, Gamma-Ai, etc
- Virtual and augmented reality applications for immersive learning

Research and Knowledge Creation

- **Research and Knowledge Creation:** Digital transformation has enhanced research capabilities through:
 - Advanced data analytics and visualization tools
 - Cloud-based collaboration platforms -Google Suite: Doc, Sheet, Slides, etc
 - Digital libraries and repositories
 - High-performance computing facilities
- Open science initiatives and digital publishing platforms, OSF, FAIR Repositories, etc

Administrative Operations

- Innovation and Digital Transformation enables universities to streamline operations through:
 - Enterprise Resource Planning (ERP) systems
 - Student Information Systems (SIS)
 - Digital enrollment and admission processes
 - Automated assessment and feedback systems
 - Data-driven decision-making tools



- **Infrastructure Requirements**
- **Financial Considerations**
- **Cultural and Organizational Change**
- **Impact on Stakeholders**
 - **Students**
 - **Faculty**
 - **Administrators**

Implementation Challenge: Infrastructure



- The successful implementation of digital transformation initiatives requires:
 - Robust technological infrastructure
 - Reliable network connectivity
 - Adequate data storage and processing capabilities
 - Cybersecurity measures
 - Regular maintenance and upgrades
 - Technical capacities of the staff



Implementation Challenge: Financial Considerations

- Universities face significant financial challenges in:
 - Initial investment in technology infrastructure
 - Ongoing maintenance and upgrade costs
 - Staff training and development
 - Software licensing and subscription fees
 - Technical support services

Implementation Challenge: Cultural and Organizational Change



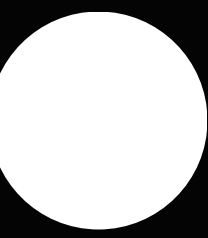
- The human aspect of digital transformation presents challenges including:
 - Resistance to change from faculty and staff (Trade Unions)
 - Need for continuous professional development
 - Adaptation of organizational structures
 - Changes in work processes and responsibilities
 - Balance between tradition and innovation

Implementation Challenge: Impact on Stakeholders



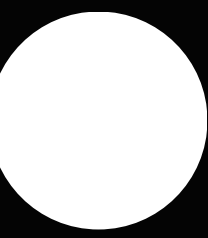
- **Students -Digital transformation affects students through:**
 - Enhanced access to educational resources
 - Improved flexibility in learning options
 - Development of digital literacy skills
 - New forms of assessment and feedback
 - Changed communication patterns with faculty and peers
 - Changed schooling process.
- **Faculty- Faculty members experience changes in:**
 - Teaching methodologies and course design
 - Research capabilities and collaboration opportunities
 - Professional development requirements
 - Workload and time management
 - Interaction with students and colleagues
- **Administrators- Administrative staff face changes in:**
 - Work processes and procedures
 - Required skill sets and competencies
 - Decision-making processes
 - Resource allocation
 - Performance measurement

General Recommendations: Caveat



- **Strategic Planning** -We need to:
 - Develop comprehensive digital transformation strategies
 - Align digital initiatives with institutional goals
 - Establish clear governance structures
 - Create realistic implementation timelines
 - Monitor and evaluate progress regularly
- **Stakeholder Engagement** -Success requires:
 - Early and continuous stakeholder involvement
 - Clear communication of benefits and expectations
 - Adequate training and support
 - Recognition of change management challenges
 - Regular feedback collection and response
- **Resource Allocation** -There is the need to
 - Prioritize investments in critical infrastructure
 - Allocate resources for ongoing maintenance
 - Support professional development
 - Maintain contingency funds
 - Monitor return on investment

Case Study: The TAU Digital Transformation



- A gradual Transition to an ICT-Driven University
- On-Premise storage and Search Engine Optimization to become Nigeria's knowledge hub
- Hosting of MIT OCW:
- A robust Portal to ensure e-everything: staff students management: admissions, registration, exeat, leave, leave of absence, loans, etc
 - moving TAU from Number 252 in Nigeria (January 2022 Webometrics Ranking) to Number 50 in Nigeria at the July 2024 Webometrics Ranking of World's Universities
 - Electronic Management of Documents: general paperless operations
 - Electronic Meetings (all statutory meetings: Council, Senate, Management, etc)

Digital Transformation and FULafia Ranking

Federal University Lafia Nasarawa State

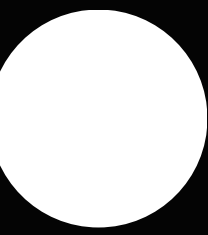
<https://ror.org/03p5jz112>

World Ranking ▲	Continental Ranking	Country Rank	Impact	Openness	Excellence
7909	242	66	9389	4005	7505



- **The role of Digital Transformation through Knowledge generation and sharing**

Specific Recommendations: Caveat



- **Low-hanging fruits: A gradual Transition to an ICT-Driven University through**
 - A robust Portal to ensure e-everything: staff students management: admissions, registration, exeat, leave, leave of absence, loans, etc
 - Electronic Management of Documents: general paperless operations
 - Electronic Meetings (all statutory meetings: Council, Senate, Management, etc)
 - On-premise servers -disaster recovery and cybersecurity plans
 - Need for more online research footprints
 - Communicate the activities of the university in digital media
 - Revenue:
 - Deployment of Data Storage as a Service, Hosting FAIR Data points
 - Community Research Data Generation -FULafia is centrally located and could become a knwoledge hub for Nigeria -Impacts Ranking

Conclusion

The future of higher education will be shaped by how effectively universities navigate this transformation while maintaining their core academic values and mission. Digital transformation in university systems represents both an opportunity and a challenge for higher education institutions. Success requires careful planning, adequate resources, and sustained commitment to change.



Thank You

