

CIVIS at Hassan II University of Casablanca (UH2C), Morocco

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University 4.0: Bridging the global skills gap

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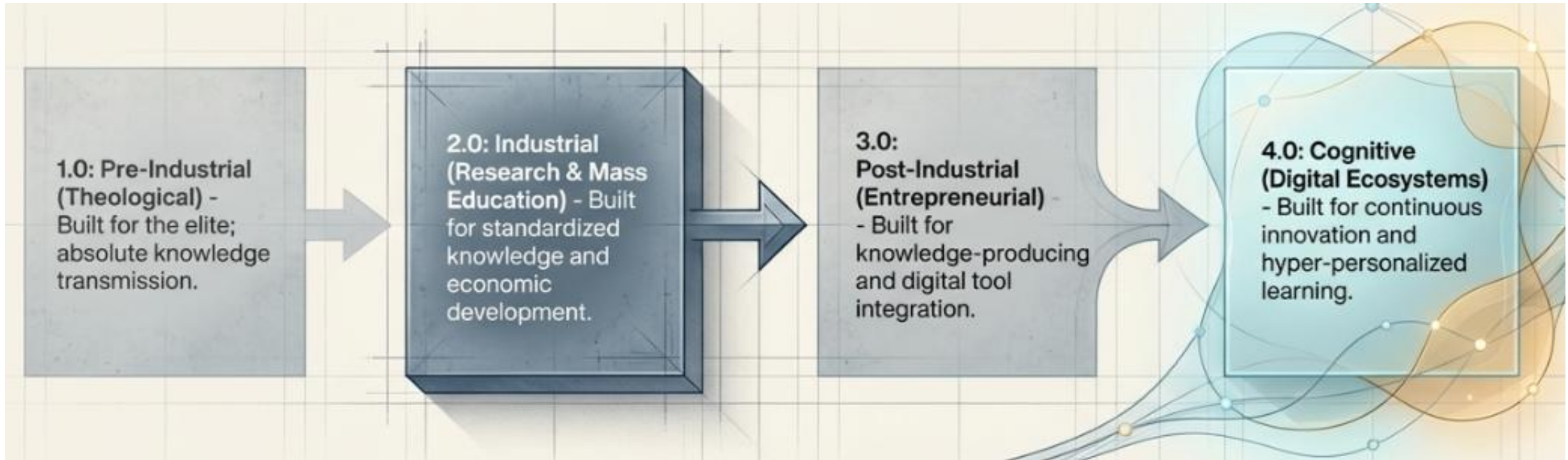
Emeritus Professor

Hassan II University of Casablanca

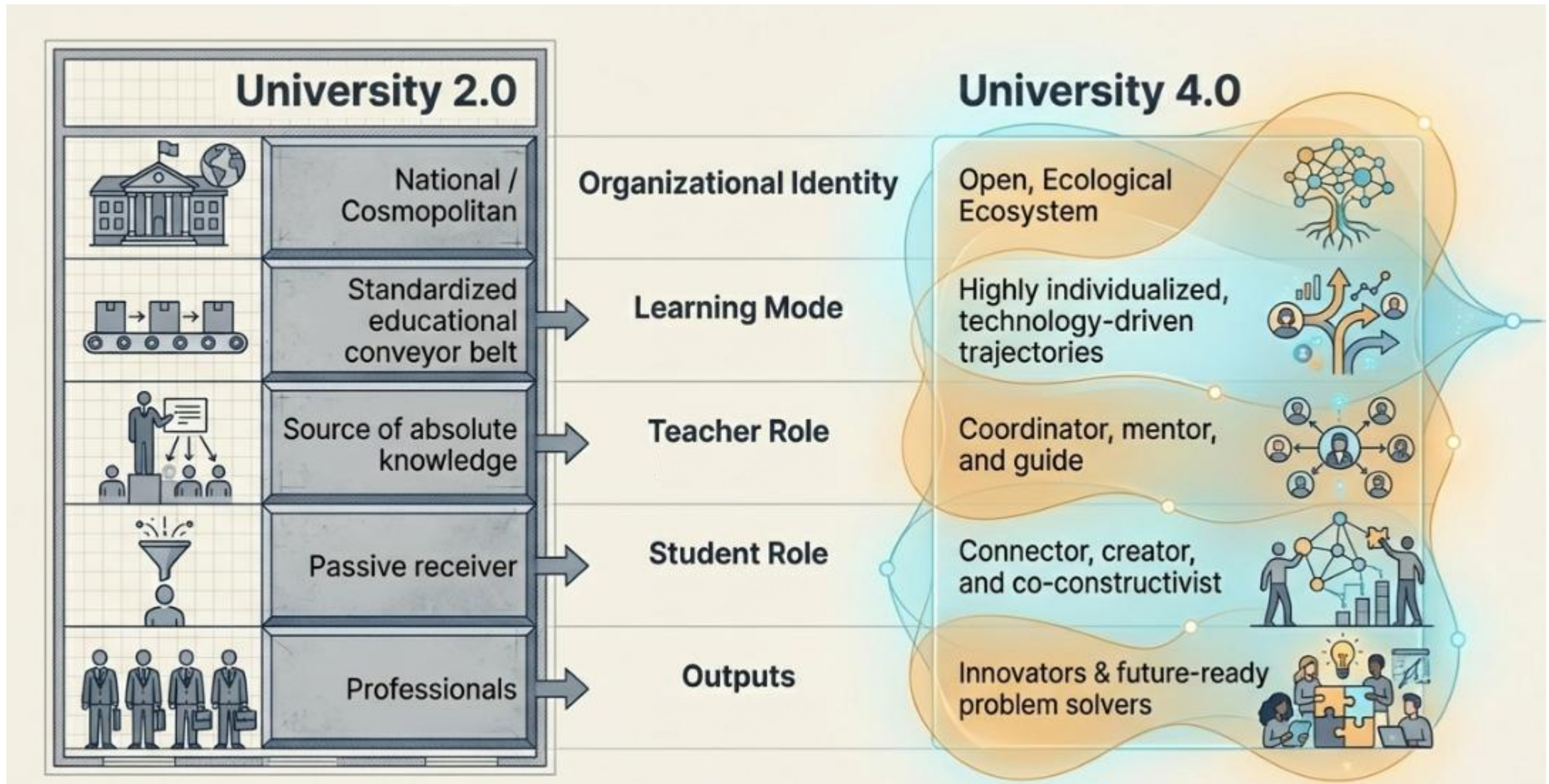
Outline

- **The paradigm shift**
- **Skills for the future**
- **Defining university 4.0**
- **Morocco's strategic roadmap**
- **Institutional readiness (UH2C Case Study)**
- **Critical Implementation Challenges & recommendations**
- **Conclusion**

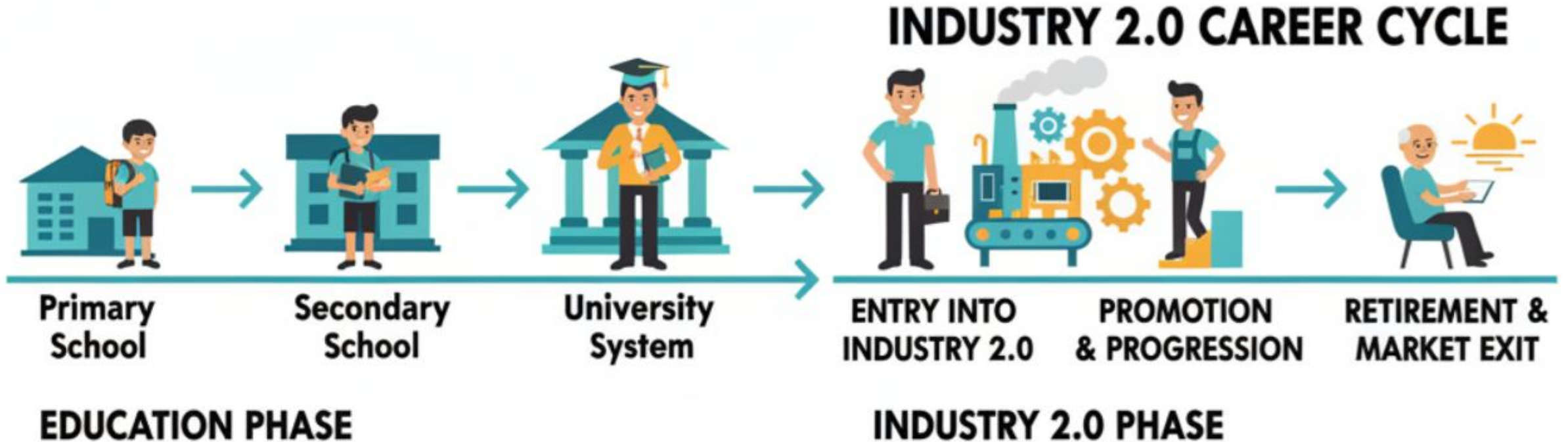
University evolution



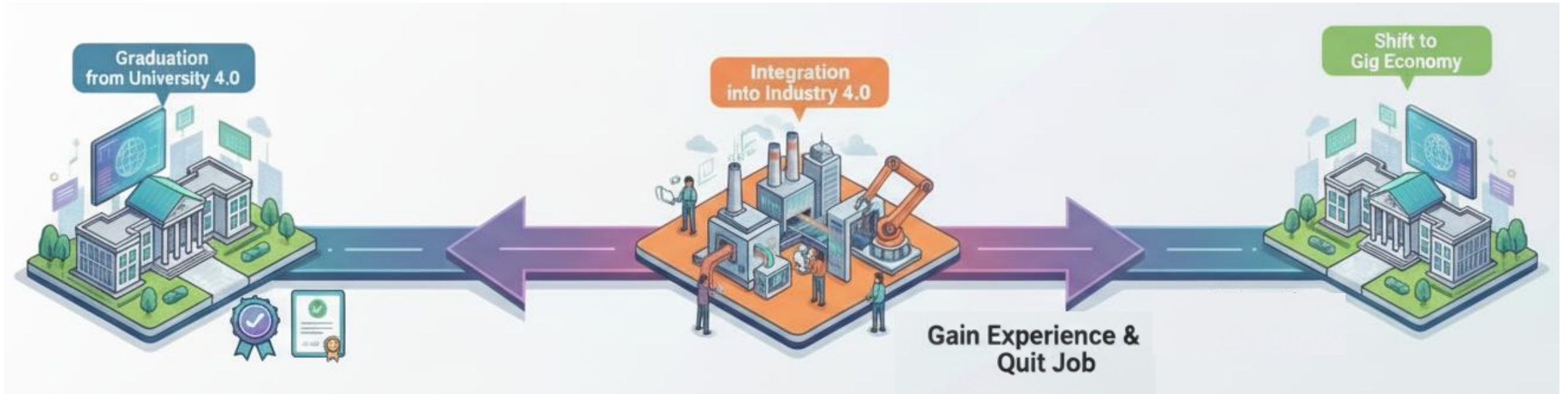
The paradigm shift: Industrial vs. cognitive



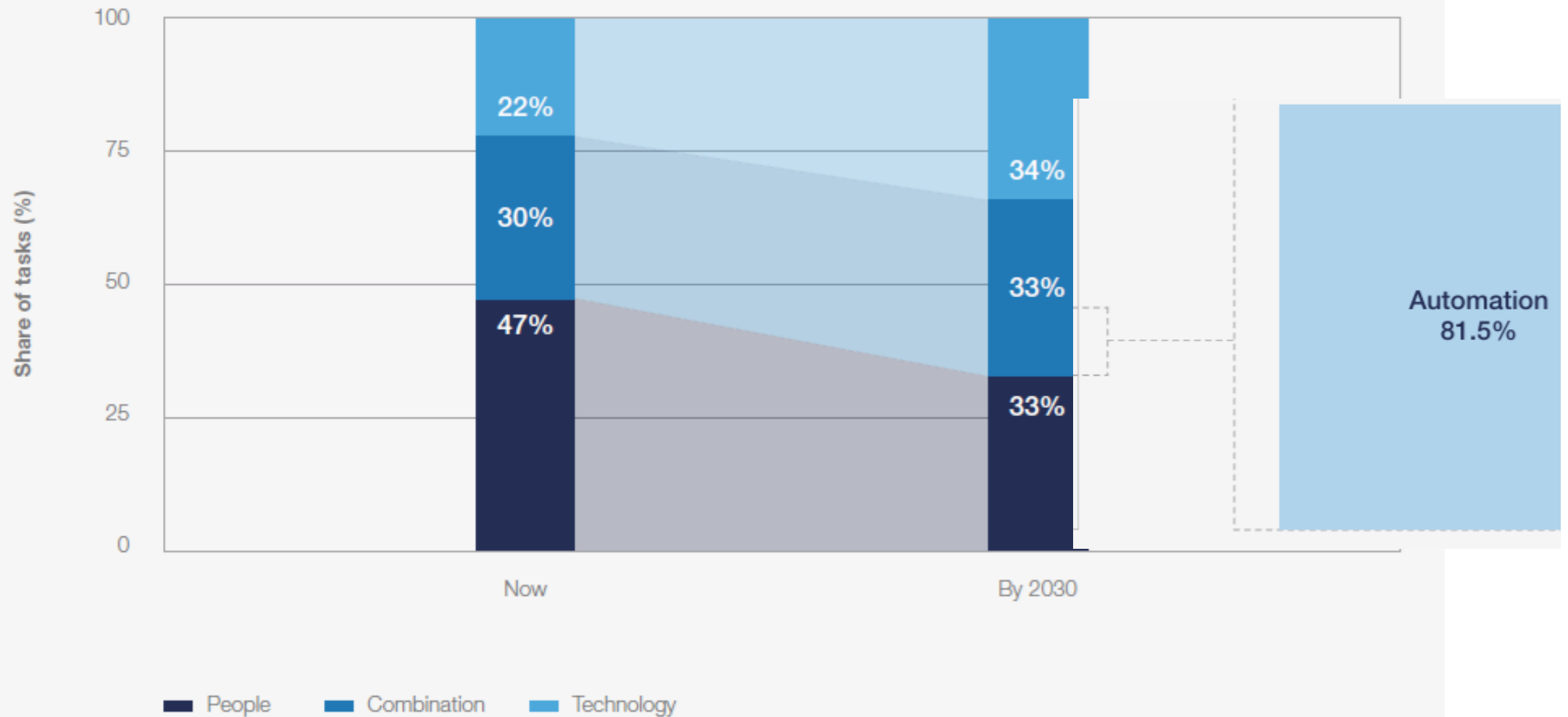
Traditional graduate journey



University 4.0 graduate journey



Role of technology in future jobs



Source

World Economic Forum, Future of Jobs Survey 2024.

The skills on the rise: Human-centric or technical?



Top 10 skills on the rise

- | | |
|---|---|
| 1.  Creative thinking | 6.  Systems thinking |
| 2.  Analytical thinking | 7.  AI and big data |
| 3.  Technological literacy | 8.  Motivation and self-awareness |
| 4.  Curiosity and lifelong learning | 9.  Talent management |
| 5.  Resilience, flexibility and agility | 10.  Service orientation and customer service |

Type of skill

-  Cognitive skills  Self-efficacy  Management skills  Technology skills  Working with others  Engagement skills

Source

World Economic Forum, Future of Jobs Report 2023.

Note

The skills judged to be increasing in importance most rapidly between 2023 and 2027

Some definitions of university 4.0

- **The sustainable development model** (Giesenbauer & Müller-Christ, 2020): **promotes the transformation of higher education toward sustainable development, whose primary aim is to train individuals capable of responding to complex societal issues in a contemporary, knowledge-based society**
- **The open "Hub" and platform model** (Lapteva & Efimov, 2016) **"green," outward-looking institution that is deeply interconnected with industry and its surrounding communities**
- **The ecological and student-centered model** (Dewar, 2017; Barnett, 2017): **primarily oriented toward serving students while remaining engaged with the productive environment outside its walls.**

Synthesis of definitions

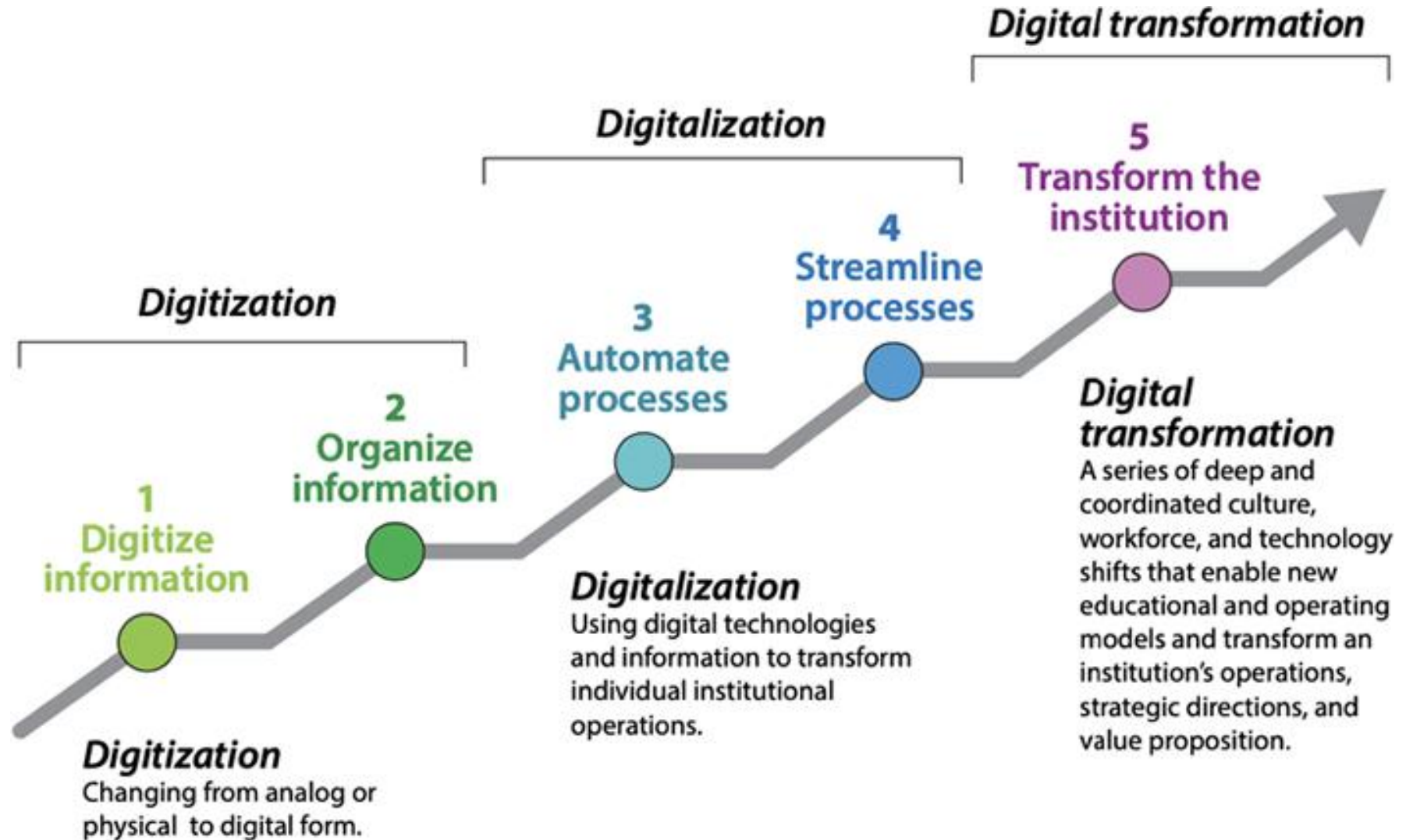
- **University 4.0** is an open, market-sensitive **hub** powered by **advanced digital technologies** that delivers **personalized education** to adapt to changing business models while simultaneously driving **sustainable development and broader societal progress**

DX: Digitizing 2.0 is NOT 4.0



Uploading a PDF to a Learning Management System or delivering a one-way lecture via video conference is not University 4.0. It is simply an expensive, digitized version of University 2.0. True transformation requires fundamentally rewiring the underlying pedagogy and organizational architecture.

Towards DX



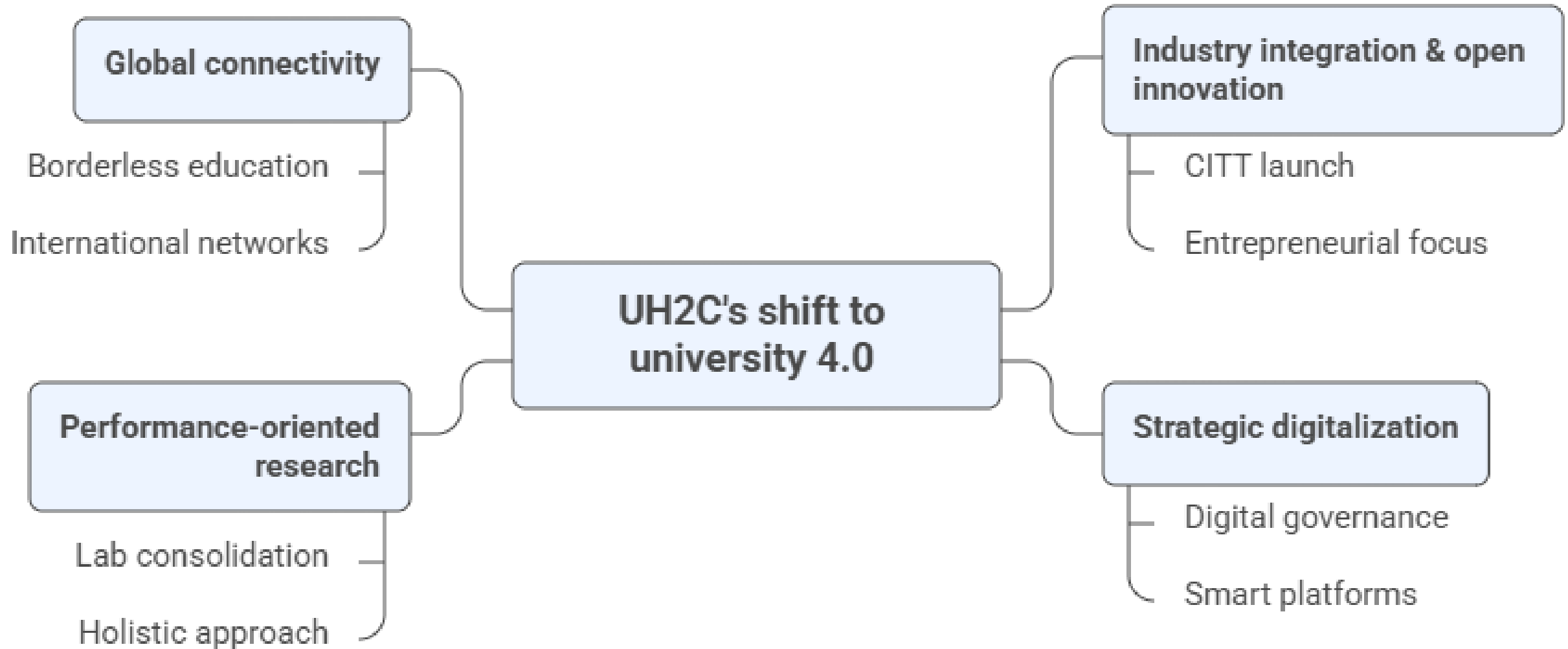
Policies in Morocco that lead to univ 4.0 readiness

Policy / Strategic Model	Core Focus	Impact on University 4.0 Implementation
New Development Model (NDM)	Socio-economic growth & human capital	<ul style="list-style-type: none"> • Grants institutional autonomy • Establishes performance contracts • Promotes industry-linked research
Strategic Vision & Law 51.17	Educational equity & quality	<ul style="list-style-type: none"> • Provides the binding legal pact • Mandates modernized pedagogical approaches
PACTE ESRI 2030	Higher ed ecosystem transformation	<ul style="list-style-type: none"> • Deploys centers of excellence & open innovation • Launches AI and data science pathways
Digital Morocco 2030	National tech infrastructure	<ul style="list-style-type: none"> • Upskills digital talent (targets 100,000/year) • Fosters startup/tech ecosystems
UM4.0 Support Program	€120M results-based financing	<ul style="list-style-type: none"> • Funds physical/digital infrastructure • Tracks "Code 212" spaces and graduate employability
Laws 59.24 & 68.25	Legal reform & quality assurance	<ul style="list-style-type: none"> • Secures university autonomy & regional clusters • Enforces international evaluation standards

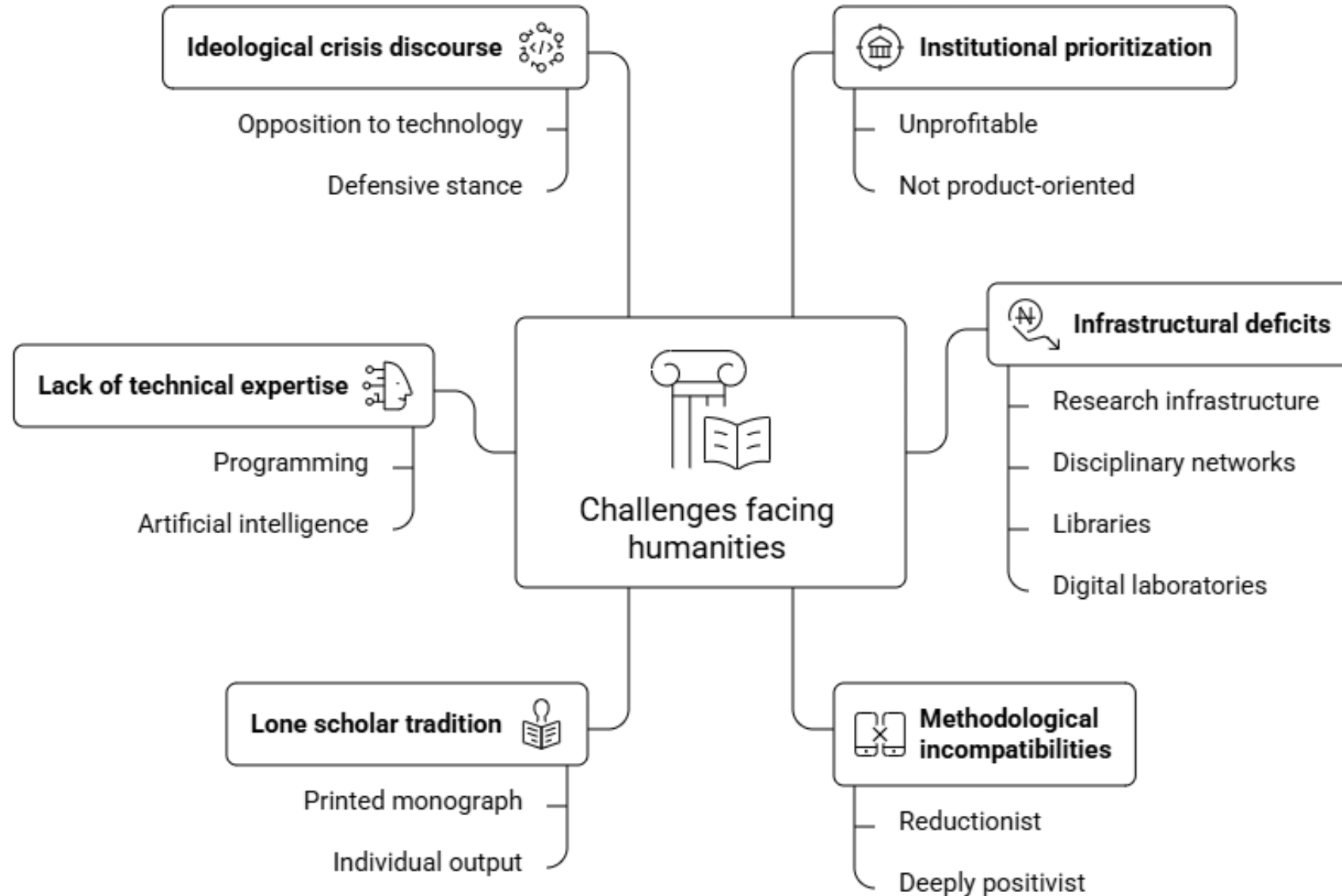
Challenges facing the Univ 4.0 implementation

- **Financial:** Extremely low R&D funding (<0.75% GDP) and heavy reliance on state budgets (70-97%).
- **Human capital:** Significant "brain drain" of skilled talent and a critical shortage of specialized AI and digital faculty.
- **Structural:** Overcrowded open-access institutions and a severe curriculum-market mismatch resulting in 34.8% graduate unemployment.
- **Governance:** Incomplete institutional autonomy lacking regulatory texts and bureaucratic or corporatist resistance to reform.
- **Technological:** Persistent digital inequalities and the absence of specific regulatory frameworks for AI and data protection.
- **Socio-economic:** Alarming rates of inactive youth, with 4.3 million NEETs (Not in Education, Employment, or Training)

UH2C: readiness to shift to univ 4.0



Humanities' obstacles for shifting to DH & univ 4.0



Main target



“The bridge is built when technology amplifies our humanity, rather than replacing it.”

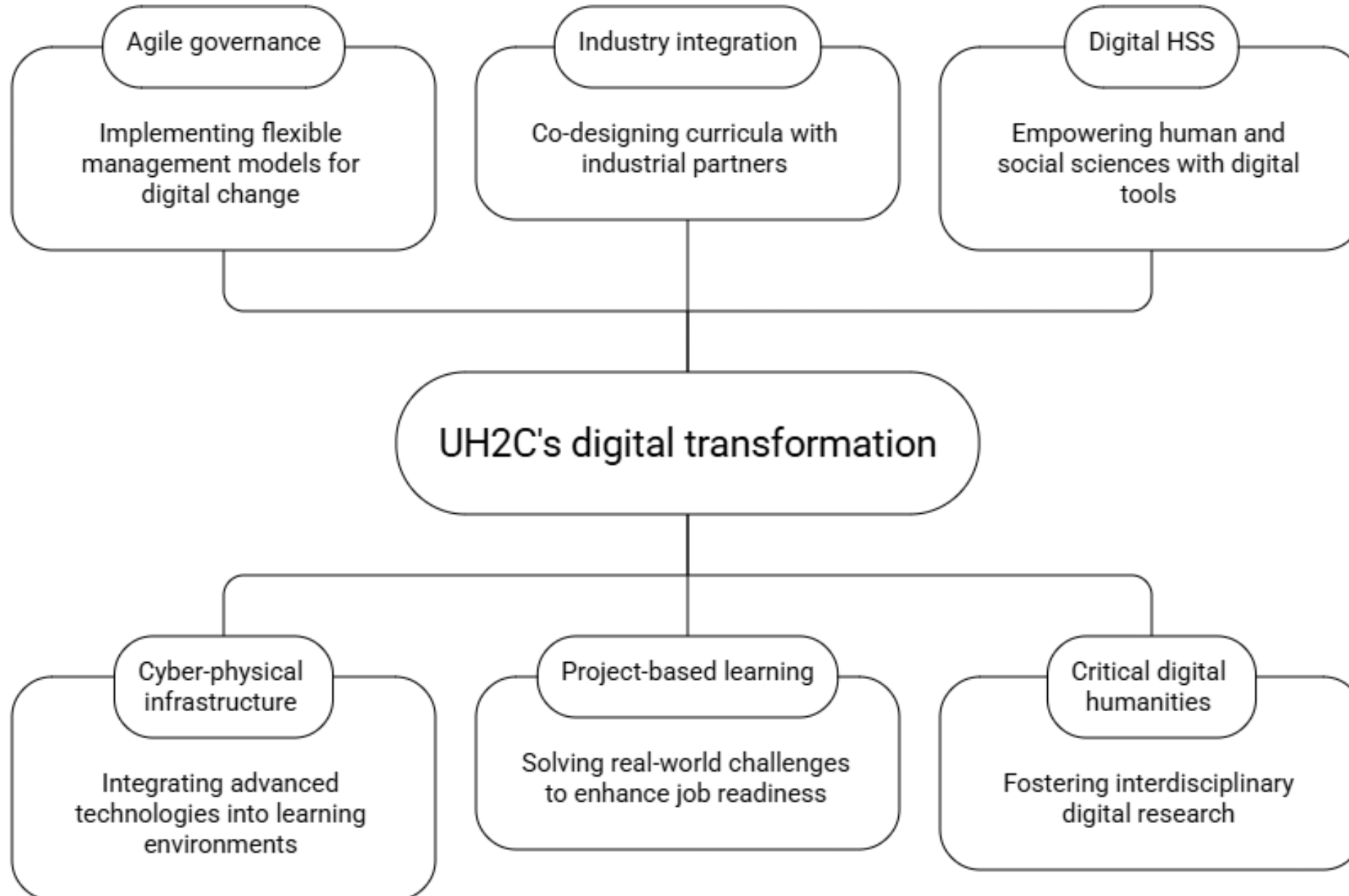
Beyond University 4.0

The ultimate goal of digitizing the humanities is not merely to optimize data, but to create a more human-centered, socially responsible academic future (Society 5.0).

Technology in Service of Culture

Moroccan universities must ensure the cognitive era is guided by ethical standards, decolonized curricula, and a commitment to sustainable development.

Recommendations



Conclusion

- **Beyond digitization:** True University 4.0 transformation requires fundamentally rewiring underlying pedagogy and organizational architecture.
- **Strategic alignment:** Morocco has established a robust legal and policy framework through the Frame Law 51.17 and the New Development Model to mandate modernized, industry-linked research.
- **The UH2C benchmark:** By consolidating research labs and integrating Human and Social Sciences through the “House of Human Sciences,” institutions can pair technical advancement with societal understanding.
- **The human-centric goal:** The ultimate target is to transition toward Society 5.0, creating a bridge where technology serves to amplify our humanity and drives sustainable development rather than replacing it.
- **Future readiness:** Success depends on moving from "passive receivers" to "innovative problem solvers" who can navigate the gig economy and a rapidly evolving digital landscape.

Thank you for your attention

Shifting to university 4.0: Digital transformation

