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Higher Education Strategies

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Employability by Design – Institutional Approaches at German Universities of Applied Sciences

Quality in Higher Education that Connects Learning, Industry and Regional Innovation

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DAAD DIES Dialog | Tbilisi 19 October 2026

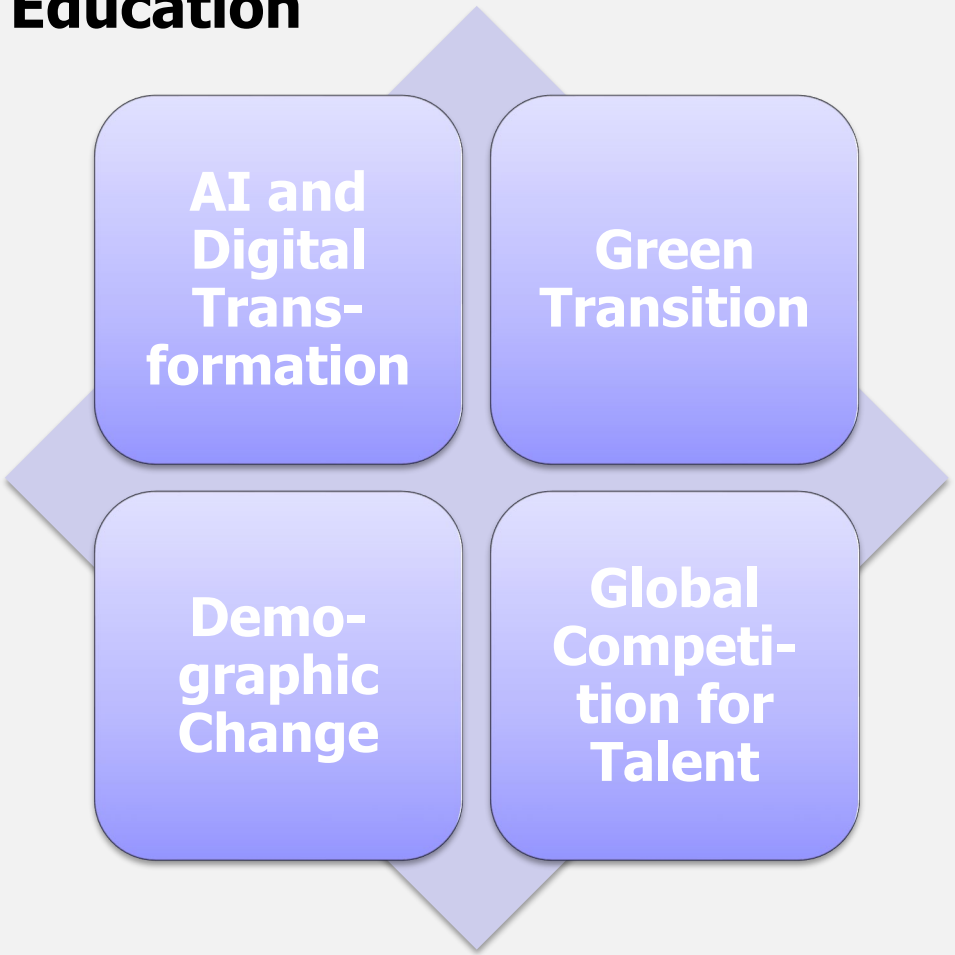
Executive Summary

- Employability is a shared institutional responsibility across the university and its partners.
- Germany's UAS system provides a proven framework for aligning higher education with industry and public institutions.

Georgian universities can adapt these design principles to their own needs and partnerships.

Why This Matters Now

Global Forces Reshaping Higher Education



Consequences: Employers increasingly require

- applied competencies
- interdisciplinary skills
- workplace readiness

Traditional university models alone struggle to respond fast enough.

The Strategic Challenge

1

University Output is not matching



Graduates lack the skills that employers need.

2

Skill Mismatch



Employers can't find the right skills. Graduates can't find the right jobs.

3

Long Transition to Employment



Graduates take longer to find suitable jobs.

4

Lower Productivity



Lower productivity slows economic growth and reduces competitiveness.

Employability at Academic Level

Professional relevance does not undermine academic standards: In higher education, employability means the ability to act professionally on an academic foundation.

Understand through theory

Use theories and disciplinary knowledge to explain and contextualise workplace problems.

Investigate systematically

Define questions, select appropriate methods and critically examine results.

Decide informed

Weigh evidence and uncertainty, recognise limitations and take responsibility for consequences.

Practice provides the problem. Academic rigour shapes how it is addressed.

One Workplace Problem Can Involve Different Competency Profiles

Example: A company wants to use AI to reduce unplanned machine downtime.

Qualification	Competency
Initial vocational training **Practice-oriented profile**	Collect measurements correctly, diagnose faults and carry out maintenance safely.
Bachelor **Academically grounded application**	Analyse data quality, justify method selection, test predictions and explain limitations.
Master **Advanced development**	Develop approaches for unfamiliar conditions, integrate knowledge and justify decisions with limited data.

Employability Is an Institutional Design Task

Students develop professional competence when five elements work together.

Learning objectives	Define expertise, problem-solving, independence and responsibility.
Curriculum and practice	Embed real challenges and supervised practice in the degree.
Teaching and supervision	Combine academic guidance with lecturers' professional experience.
Assessment	Assess individual competence through applied work and reflection.
Institutional support	Secure roles, resources and quality processes for lasting partnerships.

Universities of Applied Sciences as a Strategic Solution

Why the German Government Strongly Supports the UAS Higher Education Model

National Benefits

UAS education contributes to:

- workforce competitiveness
- industrial upgrading
- regional development
- innovation capacity
- upwards social mobility

It connects education, employability, and regional progress

Universities of Applied Sciences are the Natural Home of

- applied research
- academically grounded professional competence
- collaboration with industry and public institutions

University–Industry Collaboration in Practice

What Universities of Applied Sciences Are Really About

Complementary Strengths Converge in Applied Innovation

Each side contributes what the other lacks - the starting point for collaboration is the fit between these resources.

Universities of Applied Sciences	Applied Innovation	Industry Partners
Application-oriented research	Joint projects on real industry problems	Real challenges from operations
Interdisciplinary teams & labs	Prototypes validated in practice	Market knowledge and data
Students and emerging talent	Talent pipeline into regional industry	Testing and implementation capacity
Regional academic networks		Scaling and market access

Applied innovation: complementary strengths turn real industry challenges into scalable solutions.

Teaching Partnerships Deepen from Project to Institution

Cooperation in teaching can start with one student project and grow into a strategic partnership.

LEVEL 1

Teaching cooperation

TYPICAL FORMATS

Industry projects, thesis projects, guest lectures, dual study formats

CRITICAL SUCCESS FACTORS

Learning objectives, academic independence, supervision, confidentiality and IP

LEVEL 2

Personnel exchange

TYPICAL FORMATS

Joint appointments, secondments, professional education, industry-based doctorates

CRITICAL SUCCESS FACTORS

Roles, conflicts of interest, confidentiality and employment conditions

LEVEL 3

Strategic partnership

TYPICAL FORMATS

A portfolio of teaching, research and transfer activities

CRITICAL SUCCESS FACTORS

Framework agreement, joint governance, annual objectives, regular evaluation

Collaboration Models Rise with Shared Responsibility

The right model follows from purpose, division of work and intended use of the results.

1 Informal exchange	2 Lab or infrastruc-ture access	3 Contract research	4 Publicly funded consortium	5 Colla-borative research
USE WHEN Partners explore needs and compatibility	**USE WHEN** Equipment, testing or measurement is central	**USE WHEN** The company commissions a defined service	**USE WHEN** A joint question meets funding requirements	**USE WHEN** Both partners contribute resources and share risk
DEFINE Confidentiality and limits of the exchange	**DEFINE** Access, safety, scheduling, fees, data	**DEFINE** Scope, price, acceptance, liability, ownership	**DEFINE** Funding rules, own contributions, reporting	**DEFINE** Work plan, governance, IP and publication

LIMITED COLLABORATION → **SHARED RESPONSIBILITY**

Model choice should mirror the real contribution of each partner - and the risk they share.

Five Expectation Gaps Decide Whether the Partnership Holds

Most conflicts arise from expectations that partners have not discussed early enough.

Area of Tension	University Perspective	Company Perspective	Joint Approach
Time Horizon	Thorough investigation	Rapid decisions	Milestones with reliable interim results
Publication	Academic publication	Protection of confidential information	Review period and limited delay for patent filing
Intellectual Property	Research and teaching use	Commercial exploitation	Early agreement on background knowledge, results and usage rights
Definition of Success	Knowledge and student learning	Implementation and business value	Academic and operational success criteria
Decision-Making	Academic coordination	Corporate approval processes	Named decision-makers and an escalation path

Partners should agree on the problem, expected benefits, intellectual property and decision-making process before selecting methods or drafting a funding proposal.

Examples of Teaching Partnerships at Hochschule München - University of Applied Sciences

Good Practice 1: Digitalization

Hochschule München and Lufthansa Consulting

Students worked on real digitalization challenges from the aviation industry in an interdisciplinary course.

Industry Partner

Lufthansa Consulting

Contributes challenges and experience from consulting projects and industry feedback.

The Challenge

Current Aviation Digitalization Challenge

Business, Computer Science and Tourism contribute equally.

Academic Setting

Hochschule München University of Applied Sciences

Faculty members from three departments provide academic supervision.

Student teams developed practical digital solutions and presented them in an international innovation and entrepreneurship environment.

How the Cooperation Worked

The course followed a structured sequence from the industry challenge to the presentation of student solutions.

Process steps

01
Industry Challenge
Real case from aviation consulting

02
Interdisciplinary Teams
Business, Computer Science, Tourism

03
Coaching and Feedback
Structured support during development

04
Presentation of Solutions
International innovation and learning award format

What each step contributed

Real and demanding aviation application context

Technical, commercial and sector-specific knowledge

Current professional experience and structured feedback

Feedback beyond the university and industry partner

Student teams developed practical digital solutions and presented them in an international innovation and entrepreneurship environment.

Good Practice 2: Co-Creation Master

Master Entrepreneurship and Digital Transformation at Hochschule München - a two-semester industry project forms the academic core.

Program structure

Master of Arts, 90 ECTS, three semesters

Academic home

Hochschule München, Strascheg Center

Continuous support

Academic supervision by a professor and startup coaching

Master of Arts, 90 ECTS, three semesters - Hochschule München, Strascheg Center.

Project Sequence: From Company Challenge to Presented Solution

Six steps across two semesters, each with a defined result the company can build on.

1 Contribute Challenge
A company contributes a real digital innovation challenge.

2 Match Team
A guided matching process forms the student team.

3 Investigate
The team investigates the problem and develops possible solutions.

4 Build and Test
Students build and test a prototype or minimum viable product.

5 Validate
The team validates the solution and develops a business model.

6 Document and Present
Students document and present their approach and findings.

What Makes This Master's Program Unique?

Strengths of the model

Curricular integration: The project runs for two semesters and forms a central part of the degree.

Authentic challenge: Corporate partners contribute real and open-ended problems.

Student ownership: Teams investigate, prototype and validate their own solution.

Interdisciplinary learning: International students contribute different academic and professional perspectives.

Support structure: A professor and a startup coach support each team.

Tangible outputs: Projects produce prototypes, business models and documented findings.

Continuity: The program works with changing industry partners across successive cohorts.

Conclusion: The Master provides a replicable model for complex innovation challenges that require more time and interdisciplinary work than a conventional semester project.

Selected Industry Projects

Same co-creation structure across different industries and digital challenges.

Industry Partner	Project	Student Contribution
KUKA	WerkRob	Virtual innovation laboratory making automation accessible to SMEs
Fresenius Medical Care	KidneyTrack	Web application supporting preventive care before dialysis
Linde Gase	**GasVisor**	Digital system for monitoring and managing CO_2 cylinders
Airbus Helicopters	RetrieveAir	AI-based research assistant for helicopter comparison
	Cherry	Generative AI solution for complex product visuals
ZEISS	Bioneers	Framework for measuring corporate impacts on biodiversity
TÜV SÜD	Life Cycle Assessment Index	Model comparing lifecycle impact of new and used vehicles

Highlighted outcome — GasVisor continued as a startup and developed a patented smart measurement device.

Governance Structure for Co-Creation:
Entrepreneurship Centers Connect University and Industry

Entrepreneurship centers turn research results and student talent into ventures - and give companies a direct route into applied innovation.

Structured support for founders
Coaching, prototyping space and funding guidance for student and research teams.

Open door for companies
Firms join as mentors, challenge providers, pilot users and first customers.

Impact in the region
Spin-offs, talent and know-how stay close to the university and strengthen the local innovation ecosystem.

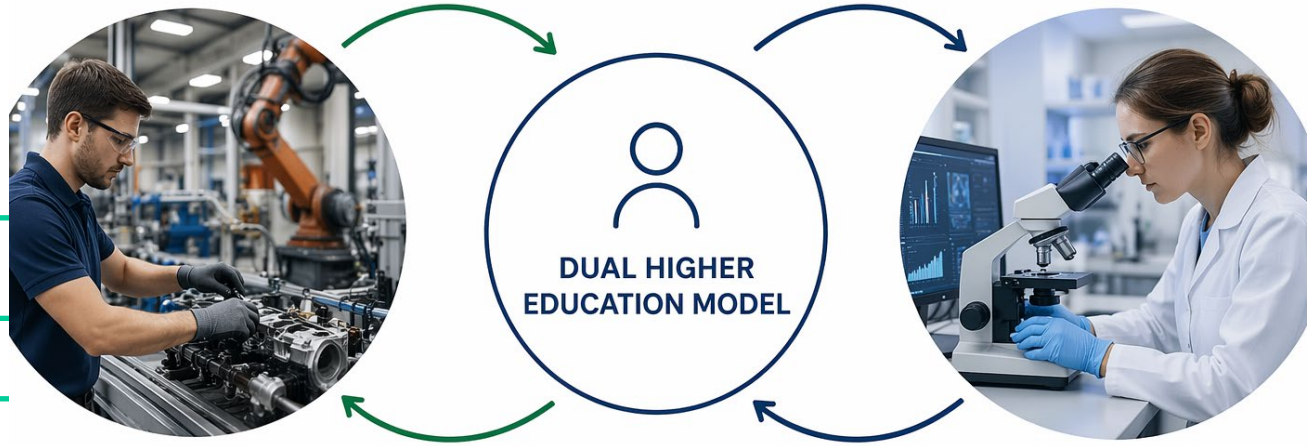
A shared platform where academic ideas meet industrial practice.



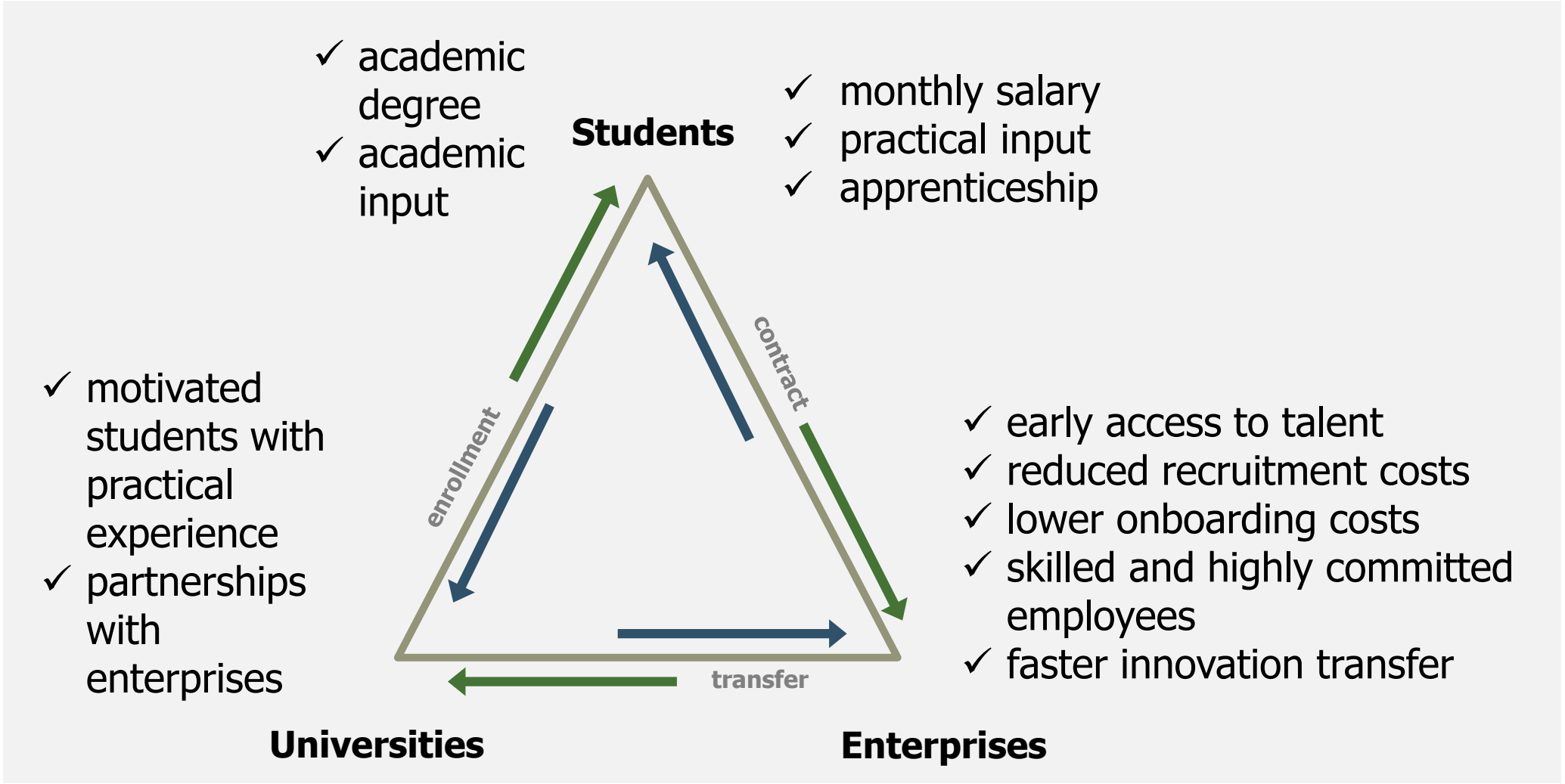
Dual Higher Education as an Enabler of Employability

Dual Higher Education as an Enabler of Employability

- Students learn and work simultaneously
- academic degree
- paid employment contract
- structured workplace learning
- integrated curriculum



Why Enterprises, Students and Universities Participate in Dual Higher Education



International Transferability of the German Approaches

International Transferability of the German Approaches

Transferable

- entrepreneurial education
- workplace learning
- employer participation
- co-designed curricula

Not directly transferable

- German regulations
- German labor market structures
- German funding mechanisms

What Decision Makers Can Do Today

Government / Education Ministry

- establish national pilot initiative

Experts of Higher Education Quality

- develop standards for adapting the UAS model

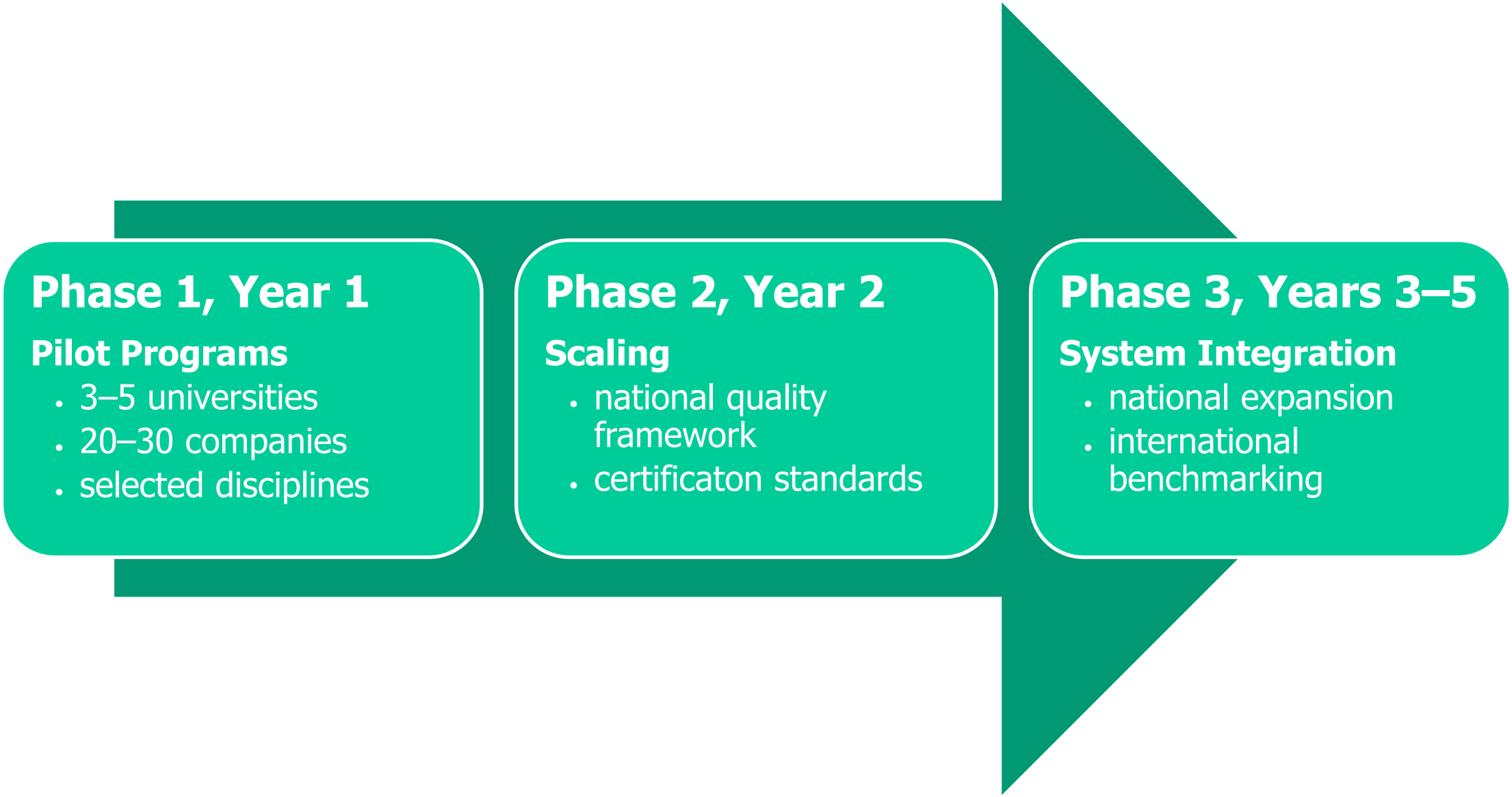
Universities

- identify industry partners

Industry

- commit pilot support

Illustrative Implementation Roadmap



The Main Risks Are Known—and Manageable

Risk	Mitigation
Limited company participation	incentives
Quality variation	evaluation / certification
Faculty resistance	training
Regulatory barriers	pilot exemptions
Scaling difficulties	phased rollout

Summary

What's Next?


STRENGTHENING THE
HIGH-IMPACT SECTORS
OF GEORGIA'S ECONOMY
TOURISM & HOSPITALITY
ICT & DIGITAL SERVICES
AGRIBUSINESS & FOOD PROCESSING
LOGISTICS & GLOBAL TRADE
MANUFACTURING & PROCESSING
RENEWABLE ENERGY
SKILLED GRADUATES
APPLIED RESEARCH
INDUSTRY PARTNERSHIPS
REGIONAL CONNECTIVITY

From Reflection to Action

- How systematically do Georgian universities embed employability in their programmes and institutional structures?
- Which design principles from German universities of applied sciences could support their further development?
- A maturity assessment can help identify strengths, development needs and priorities for action.

Workshop: assessing maturity and defining next steps.



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Advancing Quality and Innovation in Higher Education

Vice President, Munich University of Applied Sciences | 2014–2026

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