UNIVERSITIES IN AN AGE OF UNCERTAINTY

44 Propositions on the Future of Universities[1]

Higher education is known as one of the *"least digitised and most people-intensive economic sectors"*. [1] While many other industries have been disrupted in their dominant logic of value creation, [2] the education sector has experienced few changes. It continues to pursue its historical ideal of 'educating autonomous individuals' [3]. The world is changing rapidly: Recent geopolitical challenges, social polarization, pandemic-induced disruptions, the exponential growth of knowledge and simultaneously increasing scepticism towards science, as well as evolving work modes in a global economy are indicators of that change. At the same time, new digital technologies such as generative artificial intelligence (AI) highlight the necessity and opportunity for transformation of the entire higher education sector.



Foto: Christine Zueger

Prof. Oliver Gassmann
is Professor of Technology Management at the University of St. Gallen (HSG).



Foto: Alexander Castelli Hunter

Prof. Naomi Haefner
is Assistant Professor of Technology Management at the University of St. Gallen (HSG).



Foto: Benedikt Saretz

David M. Wagner
is Ph.D. Candidate and research associate at the University of St. Gallen (HSG).

"What students will need in the future is to deal with multicultural settings, to deal with highly complex situations, and to be able to analyze and come up with solutions co-created with different stakeholder groups."

Edeltraud Hanappi-Egger, President of WU Vienna

These opportunities should also be considered in light of universities' longstanding resilience in the face of change, which may stem from their ability to flourish in a research environment of cooperative competition rather than pure market competition that goes beyond the individual university.

The push for change comes from a number of drivers, which are transforming various areas of learning, work, and life simultaneously. The most prominent include:

First, demand is changing radically from a traditional certification orientation during post-secondary education towards lifelong skill and competence development. Hundreds of millions of

[1] White Paper composed for the International Symposium held on Sept. 15-16.2023 on the occasion of the 125th anniversary of the University of St. Gallen. Several university leaders have been invited for the discussion.
Full paper available at https://www.alexandria.unisg.ch/handle/20.500.14171/117981.

people will need to be reskilled soon due to technological change [4].

Second, science is opening up and accelerating knowledge creation and diffusion processes (e.g., open science and recent advances in quantum physics) [5, 6]. At the same time, science is becoming increasingly politicized, thereby placing new pressure on universities to demonstrate the societal value of research.

Third, starting in 2012, massive open online courses entered the education sector with low-cost, high-impact platforms.

Finally, universities play an important role in contributing to social and environmental development in the future, e.g., by delivering on the UN Sustainable Development Goals [7].

These trends and change drivers challenge and put pressure on established universities, leading to the question: What does the future of universities look like?

Universities engage in knowledge production through basic and applied research as well as knowledge development, which is a key element for technology and knowledge transfer to companies, nonprofit organizations, spin-offs, and the government, as well as the basis for society's ability to reflect on itself and its environment. This is a resource for reputation and a unique selling point for universities.

Universities also provide basic and advanced education, which refers to training after high school graduation and includes undergraduate and graduate programs of study, targeting students preparing to enter the job market. Furthermore, they enable lifelong learning by offering continuing education programs to learn alongside and between jobs to acquire further skills to meet the changing demands of the job market and society at large.

Humboldt's idea of educating autonomous individuals no longer suffices. Instead, it might be time to rethink the role of universities and higher education in view of the above. Higher education, as well as each university within its heritage and uniqueness, must find its specific answer, bridging science, the public, and fostering dialogue.

The derived 44 propositions on the future of universities can be found in the appendix of this paper. They take a broad perspective of higher education institutions, i.e., they are not limited to the context of business schools. Further, some of the propositions may be paradoxical; this is intentional and should be seen as fertile ground for careful and deliberate discussions. We developed these propositions over the past years using in-depth analyses of the literature on trends in higher education, interviews with leading experts, and several workshops. This summary is organized into five areas—we call them gardens—where we believe universities can co-cultivate their future.[2]

"I think the future is many things, but I think one aspect that I think is very important for us to understand is that as the world is getting more and more polarized, people are not getting along... we have to move business from just social responsibility to political responsibility."

Daniel Traça, Dean Nova School of Business and Economics Lisabon

"Interdisciplinary research is becoming increasingly important because many of the challenges society faces today will not be solved by taking one approach. Be it climate change, being at an aging society, be it the digital transformation will affect our societies at many, many different levels...So we need people who can cross bridges, people who understand other languages, other cultures, but are well rested in their own culture, in their own expertise."

Nikolaj Malchow-Møller, President of Copenhagen Business School

Co-Cultivating the Future of Universities

Our *co-cultivated garden* consists of five beds, each symbolizing the harmonious coexistence of multiple tasks, roles, challenges, and opportunities in the context of the future of universities and higher education.

- Empowering lifelong learners & thought leaders
- Facilitating adaptive learning processes
- Fostering community & responsible leadership
- University as a *Denkplatz* & knowledge exchange platform

[2] Thanks to Martin Eppler for the metaphor of "co-cultivating gardens."

"Understanding the university as an actor in global change, thinking about how we open up the conversation in order to cross disciplines, bring in new voices, be humble about where that new knowledge comes from, and who owns it, who can use it."

Clare Shine, Cambridge Institute for Sustainability Leadership

- Promoting cutting-edge research & open ecosystems Just as skilled cultivators tend to their plants, universities must adapt to navigate the challenges and opportunities of the modern era. The garden beds serve as metaphors for the intricate relationship between the legacy and the future of universities, where co-cultivation involves the active participation of various stakeholders, sharing ideas and knowledge. Together, they will grow a lush higher education garden.

Empowering Lifelong Learners & Thought Leaders

The landscape of higher education is undergoing significant transformation. Ever-evolving job profiles drive the demand for lifelong learning. As automation continues to advance, the need for higher education is further amplified as more individuals transition into knowledge-based roles. However, the rapid pace of digitisation has surpassed human capabilities in keeping up with organisational changes. Consequently, lifelong learning is poised to play a pivotal role in future education, enabling individuals to continually update their skills and knowledge.

In this context, lifelong learning is not merely an opportunity but a necessity for active participation in a responsive society. It will be characterised by greater conciseness, flexibility, and part-time engagement. Learning will emphasise real-world impact. Traditional models of learning will be complemented by experiential approaches that prioritise learning through practice and collaboration. This includes opportunities such as working alongside experienced professionals, receiving counselling, mentoring, coaching engaging in team-based/peer-to-peer learning, and immersive experiences.

Moreover, linear academic work streams will slowly be replaced by project-based learning and teaching rhythms. This approach allows learners to apply their knowledge and skills in practical contexts, fostering a deeper understanding of the subject matter. Furthermore, the integration of AI and learning analytics will be central to the learning experience, enabling personalised learning journeys tailored to individual needs and preferences.

Critical thinking and self-reflection are essential for the next generation of thought leaders who are being educated in an era of increasingly commoditised access to knowledge. As a result, problem-centric learning approaches, such as case learning tackling real-world challenges, gain prominence. In the pursuit of nurturing well-rounded individuals poised for leadership roles, the focus shifts towards cultivating a mindset characterised by curiosity, adaptability, growth potential, and emotional intelligence. These are likely relatively more critical than technical skills and knowledge.

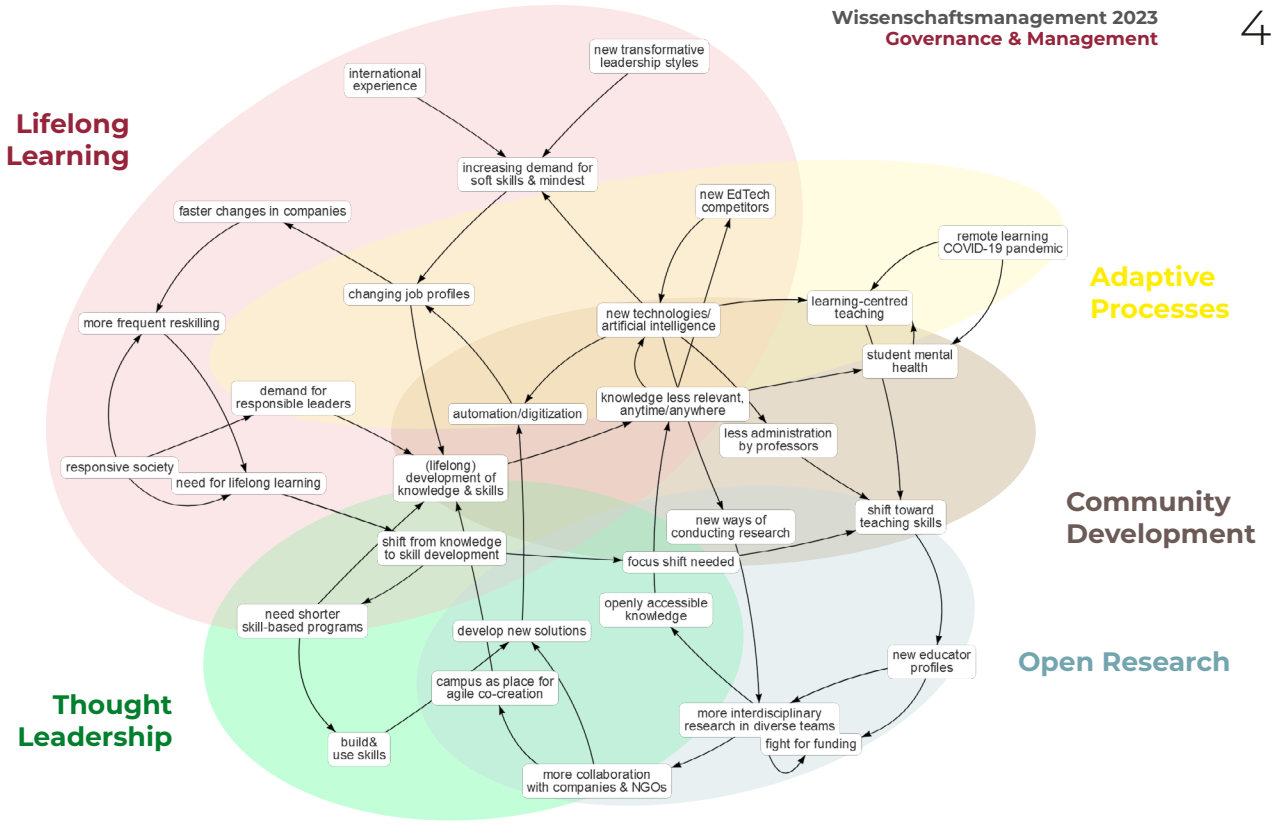
Facilitating Adaptive Learning Processes

In the ever-changing landscape of higher education, it is crucial for universities to adapt and update teaching methods to keep up with dynamic changes and technological shifts. Traditional on-campus, degree-focused learning is gradually giving way to interactive and experimental approaches that prioritise practice-oriented, careerfocused education with tangible outcomes at the core. Additionally, the need for lifelong learning has led to the emergence of shorter, skill-based programs that cater to the evolving demands of individuals seeking continuous personal and professional development.

Recognising the demands of industry, educational institutions are being urged to offer executive-type programs that focus on specific skills and can be pursued as part of a continuous learning journey rather than episodic interventions such as current certificates of advanced studies (CAS) or master's programs. However, it is crucial to strike a balance between the breadth and depth of learning experiences to ensure comprehensive skill development. It is important to acknowledge that most students entering the education system today will eventually pursue careers in fields that do not exist yet.

"Universities were originally teaching institutions. Then we became research institutions. And several years ago, it was clear that knowledge transfer into society is one of the most important functions for universities."

Edeltraud Hanappi-Egger, President of WU Vienna



Consequently, the emphasis is shifting from knowledge acquisition to the cultivation of skills and competencies that will enable individuals to adapt and thrive in a rapidly evolving professional landscape. This includes embracing technology, developing higher cognitive abilities, and fostering strong social skills.

Despite garnering substantial attention, Massive Open Online Courses (MOOCs) have not yet disrupted traditional universities or truly democratised knowledge, particularly among lower-income students. Successful MOOC participants often possess prior educational qualifications, emphasising the importance of coaching and personalised interaction, especially for disadvantaged students, complementary to existing course content, to facilitate adaptive learning processes. As intelligent automation and AI continue to make an impact, digital skills are becoming essential in academic teaching and learning. The automation of teaching and learning analytics further enables the intensification of student-centred learning processes, allowing for tailored and individualised educational experiences. Note that EdTech extends beyond digital learning; it represents an opportunity to optimise the overall student and faculty experience through digital means.

"Lifelong learning will be increasingly important and blur the boundaries between formal education, professional experience and personal development."

Nikolaj Malchow-Møller, President of Copenhagen Business School

Fostering Community & Responsible Leadership

Universities have always functioned as centres of intellectual discourse and opportunities for individuals to connect and exchange ideas. They foster in-person interaction to create a cohesive community and serve as a breeding ground for socially and environmentally responsible leaders, addressing the pressing needs of society. The demand for such leaders is urgent, and fostering diversity, equity, and inclusion has be-

"I think university leaders need to have a background as a strong scientist. They need to understand the business. Ideally, they're outstanding teachers so that they are sensitized to the importance of education to the mission of the university. But above all, they need to be able to bring the university together. The university is an extremely diverse, rich environment."

Michael Hengartner, President of ETH

come imperative. An entrepreneurial growth mindset is required to tackle grand challenges of global significance, such as healthcare, sustainability, and diversity. Universities, as role models in responsible leadership, play a vital role in shaping such leaders. To develop essential soft skills, student engagement is crucial, and these activities must be integrated into core programs rather than viewed as extracurriculars. Furthermore, the recent phase of online education has highlighted the importance of physical interactions within universities to create a common context, foster empathy, encourage serendipity, and inspire spontaneous ideation.

"What kind of technology will enable a quality of pedagogy and curricular delivery that is better than what can be done in an offline or in-person setting? Now you've built a digital learning environment that not only elevates the learning experience, but frankly makes the learner and the professor say that they'll never go to an offline experience again."

Ben Nelson, Founder and President of Minerva University

University as a *Denkplatz* & Knowledge Exchange Platform

Universities serve as an agile platform for the exchange and accessibility of knowledge, catering to the growing demand for freely available information in society. The university campus is a dynamic space that fosters interaction and collaboration among students, professors, companies, NGOs, alumni, and citizens, enabling the development of skills and knowledge through interdisciplinary teamwork and shared learning experiences. By providing a common physical space, the university environment seems effective in breaking through echo chambers and facilitating meaningful interactions and diverse perspectives.

The role of academic teachers is undergoing a transformation, shifting from being mere knowledge dispensers to becoming facilitators of learning experiences. On an open platform professors, students, alumni, and practitioners contribute their existing knowledge and contextual insights, actively engaging in the learning process. The university enables discussions and exchange, allowing its stakeholders to shape and influence society.

Promoting Cutting-edge Research & Open Ecosystems

While individual creativity remains invaluable, the most significant research breakthroughs are achieved by collaborative teamwork. Diverse teams create an environment where novel ideas flourish and critical dialogue thrives, propelling true research culture forward and pushing the boundaries of cutting-edge research. Advancements in technology, particularly the rise of AI, open new frontiers for empirical research. AI's capacity for exploratory analyses and data processing empowers researchers to delve into uncharted territories, uncovering insights that were previously inaccessible. This infusion of new technological abilities invigorates the academic landscape, propelling research towards innovative breakthroughs.

"It's about helping us together reimagine our society to move from polarization to coming together for new creative joint solutions."

Daniel Traça, Dean Nova School of Business and Economics Lisabon

Moreover, the scientific community emphasises the significance of interdisciplinary research in driving advancements. Disciplinary research, although still important, faces intensified competition on a global scale. Interdisciplinary collaboration fosters a diverse and vibrant research ecosystem, where ideas flow freely across boundaries. This open ecosystem approach is amplified by the principles of open science, which not only accelerates research and its dissemination but also challenges traditional publishing models. In this dynamic landscape, research assumes a more prominent role in the creation of start-ups and contributes to the development of economies. Empowered by an open ecosystem, young scholars find increased opportunities to establish their academic careers and make significant contributions to society.

Academic research, with its emphasis on rigorous methods, scientific integrity, and logical reasoning, plays an important role in counteracting the proliferation of misinformation and the erosion of trust in media. Academic research enables open dialogue and the exploration of novel ideas, providing the foundation for the pursuit of truth and knowledge.

Conclusion

In the ever-evolving landscape of higher education, universities need to embrace their role as co-cultivators, tending to the growth and development of a vibrant garden. The future of universities lies within these five metaphorical and distinct garden beds, each with its unique characteristics and purpose. Just as real gardens, the future of universities requires careful attention, nurturing, and collaboration among stakeholders, including learners, educators, industry partners, and the wider community. The five steps to a flourishing university garden are:

First, nurture lifelong learning, recognising the necessity of continuous skill and knowledge development in a rapidly changing world. Embrace experiential and project-based learning approaches. Integrate artificial intelligence and enable individuals to adapt to the demands of a knowledge-based workforce.

Second, adapt to changing circumstances and technological advancements. Emphasise the importance of skill development over mere knowledge acquisition. Universities must offer interactive and practice-oriented education that caters to evolving demands with tailored and individualised educational experiences.

Third, build thriving community hubs and breeding grounds for responsible leaders by emphasising the cultivation of a cohesive university community that fosters diversity, equity, and inclusion. Respond to the demand for socially and environmentally responsible leaders. Nurture student engagement and provide physical spaces for interaction and discussion.

"You cannot radically transform schools. You can only establish new attractive centers and dry out the old ones."

John Hennessy, Former President Stanford University and Chair of the Board of Alphabet

Fourth, embody the spirit of intellectual exploration and knowledge exchange. Break through echo chambers, encourage diverse perspectives, and support critical thinking, creativity, and innovation. Establish the campus as an open platform for discussions, where stakeholders can shape and influence society.

Finally, foster the transformative power of academic research. Promote scientific integrity and rigorous methods. Embrace collaborative teamwork and interdisciplinary research. Promote open science, open access to publishing, and a research culture that empowers both established and young scholars.

To conclude, universities tend to the growth and development of the garden, shaping a future where knowledge flourishes, responsible leaders emerge, and society benefits, just as skilled gardeners tend to their plants with care and expertise. In doing so, they will shape higher education as a beacon of growth, innovation, and intellectual exploration. Through co-cultivation, universities can yield bountiful fruits by navigating the complexities of the modern era and ensuring their relevance and impact in shaping a better tomorrow. ■

Kontakt:

Prof. Dr. Oliver Gassmann
Institute of Technology Management (ITEM-HSG)
Dufourstrasse 40a
9000 St. Gallen, Switzerland
Phone: +41 71 224 72 21
oliver.gassmann@unisg.ch

Prof. Dr. Naomi Haefner
naomi.haefner@unisg.ch

David M. Wagner
david.wagner@unisg.ch

To cite this paper, please use the following format:
Gassmann, O., Haefner, N., & Wagner, D. M. (2023): Universities in an age of uncertainty: 44 propositions on the future of universities [White Paper]. University of St. Gallen. https://www.alexandria.unisg.ch/handle/20.500.14171/117981

REFERENCES

Chankseliani, M./McCowan, T. (2021): Higher education and the sustainable development goals. Higher Education, 81:1–8. DOI: 10.1007/s10734-020-00652-w.

Friesike, S./Widenmayer, B./Gassmann, O./Schildhauer, T. (2014): Opening science: Towards an agenda of open science in academia and industry. Journal of Technology Transfer, 40(4):581–601. DOI: 10.1007/s10961-014-9375-6.

Gallagher, S./Palmer, J. (2020): The pandemic pushed universities online: The change was long overdue. Harvard Business Review Digital Articles, pages 2–6. URL: https://hbr.org/2020/09/the-pandemic-pushed-universities-onlinethe-change-was-long-overdue.

Gassmann, O./Frankenberger, K./Choudury, M. (2020): The Business Model Navigator: The strategies behind the most successful companies. FT Publishing International, 2nd edition.

Manyika, J./Lund, S./Chui, M./Bughin, J./Woetzel, J./Batra, P./Ko, R./Sanghvi, S. (2017): Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages. Technical report, McKinsey Global Institute. URL: https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobsgained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages.

Partha, D./David, P. A. (1994): Toward a new economics of science. Research Policy, 23 (5):487–521. DOI: 0.1016/0048-7333(94)01002-1.

von Humboldt, W. (2017): Schriften zur Bildung. Reclam Philipp Jun.

44 PROPOSITIONS ON THE FUTURE OF UNIVERSITIES

(1) Knowledge should be freely available to anyone.
(2) We urgently need socially and environmentally responsible leaders.
(3) Diversity, equity, and inclusion are imperative.
(4) Universities should foster an entrepreneurial growth mindset to solve grand challenges with a global scope, e.g., health care, sustainability, and diversity.
(5) Student engagement is paramount in developing soft skills. These activities must be actively integrated into core programs and not solely be seen as extracurriculars.
(6) Campus will be an agile space where students meet and work together in groups and interdisciplinary teams with professors, companies, NGOs, alumni, citizens, and develop skills and knowledge in common exchange.
(7) Interaction in a common physical space is more effective in breaking through echo chambers.
(8) The role of teachers shifts toward facilitating an interactive learning process.
(9) New competitors offer skill-based programs and challenge the role of universities as skills become the currency of a career.
(10) Universities provide an open platform for discussions and exchange for shaping parts of society.
(11) Universities are role models in responsible leadership.
(12) Even dropouts use the epistemological and entrepreneurial foundation of universities to build their tech or knowledge ventures (e.g., Apple, Facebook, Microsoft).
(13) Universities are increasingly evaluated on rankings and ratings in lieu of qualitative evaluation.
(14) Universities continue to have the role of thought-leadership in society. They set cultural trends.
(15) Automation will increase the need for higher education as more people will become knowledge workers.
(16) Digitisation has multiplied the speed of change in organisations by factors, humans are not able to accelerate at the same speed. Continuous/lifelong learning will play a key role in education in the future.
(17) Problem solving and critical thinking become a core component for responsible leaders.
(18) On-campus, degree-focused learning, shifts towards interactive and experimental, practice-oriented, career-focused learning with specific outcome at the centre.
(19) Life-long learning requires shorter, skill-based programs.
(20) The increasing commoditisation of knowledge heightens the need for critical thinking and reflection.
(21) Problem-centric learning gains in importance, e.g., case learning or learning by solving real challenges.
(22) Lifelong learning is not an opportunity but a requirement to be part of a responsive society. Lifelong learning will be more concise and flexible, often part-time, and action-based that means learning with a real-world impact.
(23) Industry needs shorter, skill-based executive-type programs from education. These should be organised as a continuous learning journey more so than an episodic intervention via today's CAS or master programs. At the same time the breadth and depth of learning must be taken into consideration.
(24) Most students entering the education system today will ultimately work in jobs that do not exist yet.
(25) A mindset of curiosity, adaptability, growth potential, and emotional intelligence becomes relatively more important than technical skills and knowledge.
(26) Problem-solving capabilities need even more focus on academic mindsets, e.g., curiosity, learning, experimenting.
(27) Being able to work in teams is a core skill which should be more actively developed in universities.
(28) Skills and competencies must be developed instead of knowledge, embracing technology, higher cognitive, and social skills.
(29) Covid-19 forced rapid remote learning overnight. In future, universities should prioritise the right modalities in terms of online/offline/hybrid teaching to optimise the mixture of anytime/anywhere learning and personal interaction.
(30) This phase of pure online education also showed that universities need to physically meet to create a common context and culture. Deep empathy, social serendipity, and spontaneous ideation require in-person interaction.
(31) More learning happens by doing and working alongside accomplished practitioners, counselling, mentoring, coaching, teams, peer to peer, immersion experiences.
(32) Massive open online courses have not disrupt universities yet, nor truly democratised knowledge. Successful MOOC students are often well-educated students, with an existing degree. Coaching and personalised interaction is especially important for disadvantaged students.
(33) Shift from linear academic work streams to project-based learning and teaching rhythms.
(34) With the impact of intelligent automation/AI, digital skills become the standard for academic teaching and learning.
(35) AI and learning analytics become core of learning, allowing personalised learning journeys.
(36) The automation of teaching and learning analytics allows intensification of fully student-centred learning processes.
(37) EdTech is more than digital learning; it is a way to digitally optimise the entire student and faculty experience.
(38) AI enables new exploratory empirical research settings.
(39) Academic research must continue the search for truth in times of diminishing trust in science.
(40) Interdisciplinary research is more strongly emphasised in the battle for funding; disciplinary research becomes more competitive globally.
(41) While creativity can be a great strength of individuals, most great research nowadays is done in teams.
(42) Open science further accelerates research and its diffusion. This goes beyond expropriating publishers' business models.
(43) Teams work well in diverse settings with a high level of psychological safety. Free thought and speech are the hallmarks of true research culture.
(44) Research takes on a larger role in the creation of start-ups and work.