

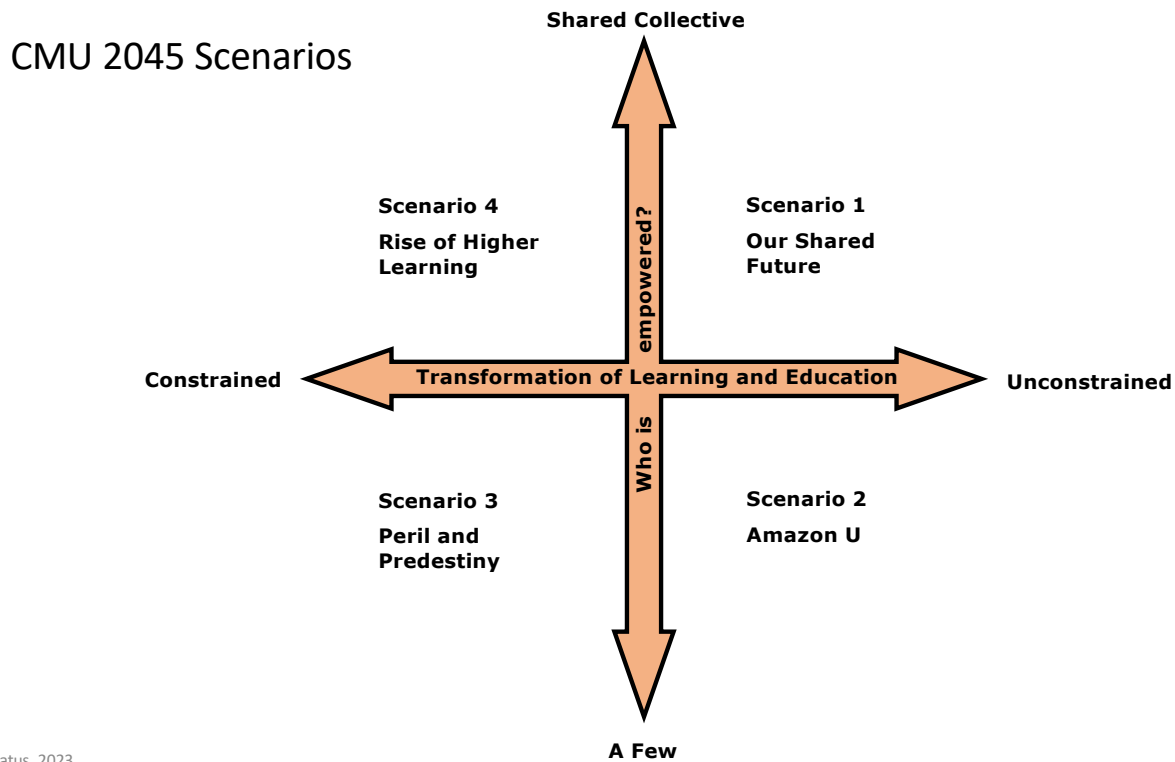
CMU 2045 Scenarios

As a means to open up the community’s creativity and to explore the uncertainty facing higher education, Central Michigan University (CMU) has chosen to use scenario planning as the basis for its academic visioning process. Scenarios are stories about the future. Scenario thinking encourages an organization to challenge deeply held assumptions and to chart a clear path forward through difficult and uncertain times. Scenario thinking allows an organization to engage around what it does not know and/or cannot control, as well as external forces that define the environment in which it must operate. These unknown forces that shape an entity’s external environment are called “critical uncertainties” and form the foundation on which scenarios are created.

In scenario thinking, we do not choose one scenario and plan toward it, but plan around a set of scenarios that elevate the most critical uncertainties we need to address. The future will never be exactly as described in any one scenario but will be made up of components of all the scenarios that are created.

The scenario planning process’s first phase was a data gathering process to help clarify CMU’s distinctiveness, areas of strategic challenge and opportunity, and the most relevant drivers of change shaping the future higher education environment. Based on the data gathering phase, the following strategic focus emerged: **How does CMU become an educator, research institution, and partner of choice in developing engaged and adaptive leaders who shape and serve the future of society?**

This strategic focus is the question this process is designed to inform. To ensure CMU stretches beyond conventional wisdom in its imaginings of the future, the end state of the CMU scenarios has been set at year 2045 (one generation into the future). Based on an interactive workshop attended by representatives of the CMU academic community, the following set of scenarios was created for the CMU academic visioning process:



This set of scenarios is framed by two critical uncertainties:

Who is Empowered? Will the shared collective be empowered or will only a few with influence be empowered?

Transformation of Learning and Education Will the transformation be constrained or unconstrained?

The two critical uncertainties frame four divergent scenarios:

Scenario 1- Our Shared Future is a world in which there is a harmonious merger of AI with humans in which augmented humans are able to tackle some of the greatest challenges facing mankind.

Scenario 2 – Amazon U is a world in which meta technology giants pioneer a new relationship between AI and humans that is not shared or experienced by everyone, but by those who are able to benefit from the industry’s seemingly unconstrained investment in education and learning.

Scenario 3 – Peril and Predestiny is a world in which education and learning opportunities are defined early in almost everyone’s life leading to a predestined career pathway. A small percentage of individuals are the lucky ones who at a young age are identified as innovators, inventors, and creators of future possibilities.

Scenario 4 – The Rise of Higher Learning is a world in which traditional higher education is replaced by new models of higher learning that are affordable and accessible to the shared collective. Those institutions that are too slow to change and are unable to demonstrate an acceptable ROI experience obsolescence.

The scenarios explore the following set of critical uncertainties over the next 18 years:

Transformation of Learning and Education >>Transformation of Higher Education	Social Equity and Inclusion
Technological Revolution	Learners
Affordability / Accessibility of Learning and Education	Future Skills (Work and Jobs)
Societal Value of Higher Ed	Role of Government
Power and Influence	External Disruptors (climate change and demographic shifts, post COVID...)
Societal Behavior and Divisiveness	Environmental Sustainability

A detailed table describing the end state in 2045 of each scenario is included for your reference. CMU will use these four scenarios to develop its Academic Vision. In approaching this material, avoid choosing a preferred scenario and suspend your disbelief such that you can consider all the possibilities presented. Remember, the future will not be as described in any one scenario but will be made up of components of all four scenarios.

Meet Charlie... Charlie (They/Them/Their) is a young adult learner with an interest in fresh water biosystems and classic literature. See the future through Charlie’s life and learning experiences...

Scenario 1: Our Shared Future

This is a world in which there is a harmonious merger of AI with humans in which augmented intelligence and humans together are able to tackle some of the greatest challenges facing humankind. A new era of equity is reached. Learning is well funded and supported federally and globally. Learners are *lifelong* learners who have honed their capabilities with their AI, augmented intelligence, to be able to adapt and keep up with – and in some cases lead – the fast-changing world. Augmented intelligence development begins in a child’s early education and then grows and expands as their capabilities and areas of interest emerge. As lifelong AI learners, their journeys with their AI counterpart are unique and highly personal, always developing, always expanding. Creativity and innovation explode leading to a fast-paced, free, and unfettered community of ideas.

Early in artificial intelligence’s development, society realized that artificial intelligence could offer the means to create an equitable playing field within society. The principles and values of equity and inclusion in the artificial intelligence seed programming create equitable and unconstrained learning from the start. Most children’s introduction is through inexpensive apps and wearable games and play that evolve into learner-driven modalities applied in both the physical and metaverse worlds that eventually merge with the person for their lifetime. The results were astounding. Collaboration and cooperation proliferate as augmented intelligence facilitates connections with others with similar interests and curiosities. Critical to this success were systems and algorithms designed to accurately discern real, quality information from flawed, low-quality information. Everyone’s artificial and natural “eyes” were now open. Fact was fact. Fiction was fiction. Privilege and oppression are dismantled and new hope and possibilities quickly rise from the ashes.

AI carried humanity to a brighter future where climate change and other complex challenges could be tackled as the world approached these challenges in a unified manner. Shared goals emerged that circumvented geopolitical bounds for, first, survival and, later, improved quality of life for people and all living ecosystems. People moved from the Anthropocene to the Symbiocene era with augmented humans in a harmonious relationship with nature and the living systems of the earth. Innovation and advancement in sustainability and closed loop living take hold. The world moves from a competitive mindset of exploitation of scarce resources into a cooperative mindset around renewing and sustaining the biosphere. Humanity moves from reacting to and acting upon the planet to becoming increasingly proactive acting in harmony with the planet. Climate change trends move in reverse. Metaverse becomes the critical simulation testing ground of innovative ideas as teams work the most critical challenges.

The concept of “achieving a degree” becomes obsolete with the accelerating pace of new knowledge and information. Instead, learners are valued for their critical thinking, creativity, experience, and ability to adapt and problem solve. Learning is affordable and accessible and happens anywhere and everywhere the learner finds themselves.

Current Drivers and Trends Signaling the Potential of this Scenario

COVID shined a stark spotlight on the inequitable structures in society and has increased people’s awareness of and intolerance for inequity. At the same time pressure continues for universal, free public education and debt forgiveness for students. Metaverse continues to expand, becoming a growing and valued place within which people find friends and community. Researchers are actively exploring the potential of embedding decision-making principles and rules within AI programming. ChatGPT that accesses the full Internet of public information is being leveraged at the individual level around specific areas of interest and questions, augmenting each individual’s knowledge and capability.

Some Strategic Questions for CMU to Consider in this Scenario:

- What does a fully shared form of governance at CMU look like with faculty, learners, and communities?
- How will CMU effectively incorporate AI into its future education and learning model?
- What is the optimal CMU campus (physical, online, metaverse) environment?

Charlie's Story in this scenario...

A gentle chime sounded, quietly at first, but got progressively louder in their head to let Charlie know that their morning yoga routine needed to wrap up.

As Charlie finished, Dorian said, "A message came in just a few minutes ago. I thought it best to wait to notify you." Dorian had been Charlie's companion since Charlie was three. Charlie remembers their parents talking about their imaginary childhood friends. For Charlie, they never needed one – they always had Dorian. As the world's problems were solved and equity became the norm, every day was filled with amazing new possibilities. Charlie's oneverse contact lenses were added when they reached 12. With them they, Charlie and Dorian, were able to seamlessly flow between the physical world, the oneverse world, and the hybrid world where the potential of the oneverse could respond to and build upon their physical reality. Every moment, every day, was a day for learning and advancing. Charlie completed what would have been tracked as secondary and college education by age 15 and was well on the way to becoming an expert on revitalizing natural ecosystems in freshwater lakes.

"What's the message?"

"Midwest Regional Post has invited us to join them abroad for their learner-centered initiative that will allow us to experience and work at their Great Lakes laboratory and native ecologic center." Dorian then added, "Among our current opportunities, this one stands out. As with all learning programs, this one is fully subsidized, but there are other considerations that will guide our decision-making."

Charlie and Dorian had been weighing their options, and this new development complicated things in the best possible way. Dorian was insistent that Charlie and Dorian meet and collaborate with Ryan and Piper – they had connected on multiple occasions in their oneverse learning experiences and they had much in common with Ryan and Piper. Upon receiving their offer, Ryan and Piper had instantaneously let Charlie and Dorian know that Ryan and Piper were accepting the offer.

Ryan and Piper were, like Charlie and Dorian, an augmented individual. The advent of quantum computing helped humanity to solve many of its problems, including how to solve worries about artificial intelligences running amok. With the appropriate safety protocols in place, individuals were able to choose for themselves their best options for augmentation without fear of losing their freedom to make their own choices. Moreover, once artificial intelligences became considered persons, the notion of "personhood" opened up in new ways, allowing for people to begin to think of augmented combinations to be "individuals". Charlie and Dorian thought of themselves this way, as did Piper and Ryan, which surely featured in the explanation for their friendship.

"The MRP opportunity sounds amazing. Given their rich history, I believe we would love to be able to see and learn from the local indigenous peoples' knowledge and wisdom to further revitalize the freshwater ecosystems. Their deeper connection with the natural world and deeper sense of knowing would be amazing to experience. Our other options lack that, and while we'd love the virtual visits they offer, I'm sure we can still get those at Midwest Regional and have an amazing experience at their physical location."

"Yes, Midwest Regional offers a virtual option, an on-campus option, and, of course, a oneverse hybrid option. You can tailor your experience in any number of different ways." Dorian's ability to find, filter, and summarize information made their decision making so much easier over the years; they cannot imagine not being together.

"Being able to be at a place like Midwest Regional, which is unlike our other options, and being able to serve our peers and the institution immediately in a meaningful way is an opportunity I don't think we can pass up. This experience will, I think, really help to shape us as an augmented human being. But we shouldn't let the excitement of the moment sway us. Set a reminder for us to consider this further tomorrow. What's next?"

"We have our virtual visit to Tikal in thirty-three minutes, followed by our discussion group social..."

Scenario 2: Amazon U

This is a world in which meta technology giants pioneer a new relationship between AI and humans that is only experienced by a few who are able to benefit from the industry's seemingly unconstrained investment in education and learning. A few large, influential tech industry players are shaping the future potential of the population to be engaged learners and to be valued members of society. They invest to strengthen innovation and tech programs at an investment level well beyond that of the standard public education. These tech giants embrace the concept of lifelong and continuous learning for their future talent and develop nondegree, learner driven programs that develop individuals, in consort with AI, who continue to learn, adapt and grow in capabilities and creativity throughout their careers.

Select higher education institutions are acquired as part of the tech players' educational systems. With the importance of developing adaptive and creative learners to enter the workforce, many of these new tech industry institutions value both STEM and the humanities. The new models are increasingly virtual and mobile and fewer "brick and mortar" with experiential learning and externships taking place often in the Metaverse. Top high school graduates aspire to attend the new high tech school systems in preparation for successful future careers. Many receive attractive scholarships having been identified by various industry AI bots through contests and online challenges open to all students with smart phones or internet access.

Those higher education institutions that are not acquired struggle to make the transformation to a new and more flexible model of learning and education. Many merge to become regional or focused online institutions. Michigan creates a University system.

Investment in public schools continues with a growing emphasis on the development of skills and abilities to be a valued contributor to society and a lifelong learner. Many students receive a pragmatic and relevant education with skills development and training toward their desired future career. When individuals are identified as well-suited for an innovator career, the public schools recommend those students to tech industry programs. Some are accepted.

The tech industry has created a powerful pipeline of talent to ensure its future, but the system is flawed with a significant portion of excluded talent in rural and urban settings who, for socioeconomic reasons, cannot afford digital access.

Current Drivers and Trends Signaling the Potential of this Scenario

Higher education is currently cost-prohibitive for most individuals. Society is valuing formalized education less and less. STEM education has taken the current spotlight with thriving programs in AI and computational technology that are leading to high paying careers. Currently, the Metaverse is home to ten Universities. Microsoft, Google and other high-tech players are partnering with education institutions to provide training and development in building technical literacy for youth and adults.

Some Strategic Questions for CMU to Consider in this Scenario:

- How should CMU respond to rising influence and power of the tech industry? Partnering? Competing?
- How can/should CMU compete with online certificates offered by the likes of Google or Amazon?
- How does CMU overcome the digital divide and related issues of inequity and exclusion in education and learning?

Charlie's Story in this scenario...

Charlie stepped out of their home into the warm sunshine, eagerly anticipating a mind-clearing walk. The day's lessons had been fascinating, but Charlie needed a break to refocus for the project they'd hoped to continue working on this evening.

"Dorian, is this weather going to hold for a few more days?"

"Yes, until Thursday, when we can expect to see some rain." Dorian and Charlie had been together since Charlie was six and Amazon had recruited them for their Young Innovators (YI) program based on their entry in the Amazon Innovator Contest when they were in 4th grade. Charlie had created a self-sustaining bioactive sealed terrarium that was still flourishing in their room. All YIs were augmented with an AI companion. Other children, like Charlie's best friend Sam, were identified in other ways, by solving open puzzles offered by one of several large, technology corporations online. Some years ago, several tech giants decided that they would use their developments to better society by re-thinking education and opening it up for those that *they* thought would be well-suited to make positive changes for the world.

As Charlie and Dorian walked into a park, Charlie noticed children playing, and began to wonder which of them might join the YI program, and which might end up doing more "practical" work. Charlie's current project involved finding ways to ensure that the YI program didn't select individuals in problematic ways, thereby unintentionally reinforcing past injustices.

"How do we make sure that the selection process is as fair as possible? Imagine if Sam hadn't been selected, hadn't happened upon the puzzle and chosen to try and solve it? What a waste of talent that would have been! Would Sam have gone to a brick-and-mortar University and been spoon fed whatever they felt was required for a particular major? Who knows if Sam would even have been able to do something worthwhile with what he had learned? Or would Sam have gone straight into some random job?"

Dorian had a long history of Charlie's musings, and was used to keeping them from derailing their progress on whatever project they were working on. "Remember when we read Plato's **Republic**? We found his argument that a perfectly just society would divvy people into the roles for which they're best suited compelling, right? As innovators, we need to make sure that our society is doing that *properly*." Dorian knew that Charlie loved arguments from old texts, and was often swayed by them, even when they weren't the best arguments.

Charlie watched the children play a game of tag and was impressed by the strategies the child who was "it" employed to distract the other children so that they would be more likely to be tagged.

"Why shouldn't we let all children into the program, and then see who produces? That'd be a way to be sure we weren't problematically leaving anyone out. It'd be like letting all the kids play tag, and watching to see who excels."

Dorian did not approve of where this was heading. "Charlie, who would then be trained to do the jobs that keep society running? There's nothing wrong with picking up others' recyclables. We *need* those people as much as we need innovators. Now, let's head back and see if we can come up with a *better* solution..."

And with that, Charlie suddenly seemed not as concerned that they'd stumbled onto a good solution...

Scenario 3: Peril and Predestiny

This is a world in which education and learning opportunities are defined early in life leading to a predestined career pathway. A small percentage of individuals are the lucky ones who at a young age were identified as having technical prowess that would allow them to be prepared to be innovators, inventors, creators of future advancement. As the higher education's underutilized programs reach the cliff of plummeting numbers of students, those programs are retooled by the federal government to identify and track acuity and prepare students for future career paths. Education and learning has strong governmental control and oversight with funding being connected to achievement of learning outcomes. Society moves to clarifying education and learning goals early for individuals leading to well-defined career pathways. Creativity and innovation are not realized for most as many are left out and career preparation's prescriptive nature stifles creativity.

From the early years, AI systems embedded in games and apps allowed children's future pathways to be determined. The systems looked at the individual and the aggregate of those tested to optimize the future makeup of society based on each child's cognitive, emotional, and physical capability as well as society's aggregate needs. The approach ensured there would be enough doctors, security personnel, technological innovators, cybersecurity experts, researchers, teachers, caregivers, tradespeople, etc. The system evolved overtime into one of the only things that people could depend on in perilous times.

In this world, once a pathway is identified, that person's education and learning process becomes highly efficient. The education and learning system spans primary and secondary education through to higher education, coop offerings, or trade schools. The majority of individuals receive pragmatic and relevant educations, skills development, and training and find satisfaction in their future careers. The cost of educational programs is determined by expected income for those jobs. In this pragmatic world, few are lifelong learners.

Societal division and unrest continue to increase as inequities become blatantly clear. Misinformation and supporting AI algorithms on social media increase divisiveness, and the onslaught of climate change's relentless impacts from severe storms to deadly droughts and floods take their toll around the world. The migration of people globally reaches never before seen levels. The digital divide not only continues but expands with so many displaced individuals finding themselves unwelcome in strange lands. New measures are taken by governmental bodies to control and maintain law and order and provide safety for citizenry, including the formation of the Climate Corp, a Federally run Corp of individuals focused on fighting back against climate change and responding to the challenges that ensue as a result of climate change.

A universal baseline level of education is mandated for all individuals that provides minimally required knowledge and does not ensure future career success. Generations of families and communities are left out of the system altogether. The future of individuals is foretold by the socioeconomic status, catastrophic circumstance, and community within which they are born.

Government censorship of content is the norm. Even when constrained, innovation finds ways to emerge. Entrepreneurs begin to emerge with simple and ubiquitous tools developed through opensource AI and tech platforms that provide low-cost access to learning and education that crosses socioeconomic lines and provides black market access to censored content. Learners with digital access discover doors to their future.

Current Drivers and Trends Signaling the Potential of this Scenario

Current push in higher education to track the return on investment and the value of education. Higher education remains unaffordable and inaccessible for many. Funding for higher education continues to decrease. The digital divide in society continues to proliferate systemic inequities in education and opportunity. And climate change continues to escalate without an effective response from humanity.

Some Strategic Questions for CMU to Consider in this Scenario:

- How will identifying desired career goals shape the future CMU learning and education model?
- How should CMU best position its academic offerings for such a future?
- How best should CMU manage the shrinking traditional pool of incoming students?

Charlie's Story in this scenario...

Golden fall days had given way quickly this year to darkening skies—and icy rain was forecasted earlier than usual. Charlie, having finished their daily run, transitioned like clockwork to a cooldown walk, mentally prepping for the challenging day ahead.

“Dorian, remind me again what today's training regimen looks like.”

Dorian, Charlie's artificial intelligence assistant, was by now well used to the former's cognitive, emotional, and physical abilities, having been assigned to Charlie at an early age. Dorian's calm yet firm voice echoed in Charlie's ear buds, “Today is focused on mental and physical endurance as well as your limnology studies of freshwater ecosystems.”

This news did not relieve Charlie, as they HATED the endurance training, especially after a run. But if they wanted to become a commissioned officer in the Climate Corp, Charlie knew that they needed to enter in the best shape possible.

Charlie didn't *want* to enter Climate Corp, much less *choose* this path. Midwestern kids from lower-middle class families didn't have much choice, however. Charlie remembered being told that when their early standardized game scores came back, Dorian had been assigned as a learning app/assistant to support key learning gaps and to build on their natural interest and curiosity in the sciences. Dorian's guidance and support ensured that by age eleven Charlie's future prospects appeared assured. They did love the water and imagined they may grow to like their work on freshwater algae fields as a food source, but, frankly, they never had a chance to imagine much else.

After finishing their long day of training, Charlie settled into their favorite chair with one of their favorite books, Marcus Aurelius' *Meditations* that she had acquired on the black market. Charlie would love to be able to learn to read the original Greek, but there simply wasn't time for that and she couldn't imagine how she would access the content. A fondness for classic works simply didn't position one well for the Climate Corp. Educational opportunities were determined by what one could contribute to society, and only a select few were offered the opportunity to pursue whatever they wanted in the hopes that they'd develop some great new thing for society. Charlie's interests in sports and classics simply did not fit with their Climate Corp preparatory training.

“Charlie, you asked me to remind you when it's bedtime, so this is that reminder.”

Dorian had been Charlie's constant companion for the bulk of their life. “Thanks, Dorian. Please make sure I'm up by 5 a.m. Big day tomorrow...”

Dorian woke Charlie promptly at 5 a.m. A quick shower followed by a hurried breakfast in turn led to tearful goodbyes with their family. Charlie saved their last moment at home for Dorian.

“Well, the day's finally here. I'm off to begin orientation. I have to leave you behind, Dorian, as you know. Climate Corp doesn't allow AIs, and after that, they'll assign me a new one. Thanks for everything. At least you found me a life path where *some* classics are relevant. This is really difficult for me. Thank you . . . for everything.”

“Good luck, Charlie. I know you'll do well. I've known you'd do well for years. Please don't forget to activate the “Career First Step” aspect of my programming to shut me down.”

Charlie opened the settings in their smart device, located the Dorian app, and clicked on the “Career First Step” icon. Charlie read the on-screen prompt, “Are you sure you're ready to take your First Step? Charlie's finger hovered over the icon for a long time as tears filled their eyes. “Goodbye, Dorian.”

Scenario 4: The Rise of Higher Learning

This is a world in which traditional higher education is replaced by new models of higher learning that are affordable and accessible to the shared collective. Those institutions that are too slow to change and are unable to demonstrate an acceptable ROI experience obsolescence. Public funding of these institutions continues to erode and the traditional student pool plummets with decreasing numbers of high school graduates. Innovation in learning models and approaches is key to success. It requires institutions to undergo radical change and a reimagining of learning and education.

In this world there are many fads that arise and fail as well as work arounds and copycats. The new models that finally do take hold are flexible and meet the universal desire for learning early, throughout one's career, and throughout one's life. The most successful models drop traditional higher ed's baggage and legacy that continue to constrain most higher education institutions from fully realizing their potential. The successful systems are decentralized, online or Metaverse-based that are linked with strategically located physical campuses or locations. Some universities choose to create their campus space aboard ships that travel the world, leveraging location as an integral part of the learning experience. Others find they become the destination of many that join their communities as they escape the devastation and risks of climate change.

Higher education with its existing physical institutions and assets struggles to achieve financial viability. Some universities focus on financial sustainability, reducing costs and removing redundancy and waste. Technology allows them to further streamline their educational programs and models, positioning them to explore this new territory and freeing up resources that they then can invest in new learning opportunities found around the world and in the Metaverse. Most Universities struggle to transition their faculty and staff to feel a part of this new learning environment. Students experience an increased self-efficacy that leads them in shaping and creating their own learning paths and programs. These energized students either lead their institutions with innovative new pilots and experiences to welcome the community into this new environment or choose to step out of traditional higher education altogether. Schools begin to emerge around learners' specific areas of interest and focus. Schools embrace student/learner-driven models with new egalitarian governance. Businesses and employers find this new pool of talent both interesting and helpful to position them for the future. Applied learning and critical thinking skills are highly valued.

Innovators become the problem solvers of society's greatest challenges through a more open and connected Metaverse. Individuals who become engaged in this critical work receive debt forgiveness throughout their lifelong learning. This opportunity attracts many people to citizen science. Learners fully develop their capabilities to learn and adapt as part of their higher learning such that they become autonomous and adaptive lifelong learners. Learning and education becomes a la carte and the options seem limitless and overwhelming.

Current Drivers and Trends Signaling the Potential of this Scenario

With current unsustainable cost structures and reduced enrollment, many institutions are exploring new revenue sources and even further cost reduction. Other institutions are focusing on self-sustainability, and carbon neutrality as avenues to future success. Many are experimenting with reimagining learning models. At the same time new and uncharted AI territory is opening up with Meta giving select researchers access to advance AI language software to enable chatbot development. Minerva University's undergraduate students experience four years of intensive education in a global context. They gain universal skills to become analytic decision-makers, creative problem-solvers, and engaged world citizens by living and learning across Minerva's world campus.

Some Strategic Questions for CMU to Consider in this Scenario:

- What will CMU do to avoid being constrained by its current structures and systems?
- How will CMU nurture student-driven higher learning models?
- What can CMU do to achieve self-sustainability?

Charlie's Story in this scenario...

"Hello?" Charlie said, hopeful about *finally* getting some help.

"Hello Charlie, I'm Dorian. I've been developed to help people like you make sense of your educational options."

Charlie had downloaded Dorian as a last-ditch effort to decide where to apply for post-compulsory learning – the choices were overwhelming. Charlie's advisors, family, and friends all seemed to have, at best, incomplete knowledge about what Charlie's options were.

"Hi Dorian, I'm hoping you can help me. I'm not sure what I want to do, so I'm not sure what I want to study."

"TechVerse has a wide array of onverse programs devoted to addressing key social issues and designed to help students like you find exactly what they want."

"No, I don't want a completely virtual experience. I want to meet real people and experience new places." Although Charlie found that gaming online was fine for virtual interactions, but still loved doing things like eating meals with people, and playing games in person from time to time.

"GlobalU offers an eight-week immersive program of courses based in international locations. The choices they offer are truly amazing!"

"That sounds great, but also...exhausting. Ok, maybe just *one* new place with the opportunity to study abroad? Is that possible?"

"Southeastern Liberal Arts College is located on a beautiful campus and they offer several study abroad options. They are a carbon neutral campus. Only eight students are admitted each academic year, and those students spend time in small classes with ample opportunity to interact with their professors."

"That's too few new people! Ok, how about something like that, but bigger?"

"There are many such schools, but I'm going to need more information. How would you describe yourself as a learner? Do you like to learn by reading, by being lectured to, by teaching yourself, by playing games, by having small group discussions, or by having faculty-led discussions?"

"I...don't know. I guess a little bit of all of that, depending on the topic." Charlie was beginning to feel again the frustration that led to them downloading Dorian.

Dorian continued, "Many regional universities have focused on one learning method. There are some, however, that have been slow to re-brand. The downside is they don't really stand out in any particular area and they are struggling to sustain their models. Midwest Regional, for instance, offers all of those learning styles, but one often won't know what they'll be getting until they're in a particular class."

"Actually, that might be OK as I am not sure what styles I will prefer anyway. At least then I will be able to swap out if I find a class that doesn't suit me without having to switch institutions!"

"That's true if they are able to sustain themselves. Otherwise, though you should be able to carry over what you learn from MRU. I'll need just a little more information before I can tell if MRU is a good match or not. What are you interested in studying?"

"OMFG I DO NOT KNOW!!! THAT'S HOW WE STARTED THIS CONVERSATION!!!" Charlie walked away, needing to cool down to reflect on their learning options. There was just so much to consider, Charlie thought. Choosing the right higher learning experience was challenging, but they were committed to the process and would take time to reflect on their learning options. On the bright side, most of the new models and choices were easily accessible and very affordable.

CMU End State Table

YR: 2045	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Transformation of Learning and Education	Learner-centered Merging with AI/tech Individualized (supported mentored) Open Access	Basic learning and education available for the masses Advanced offerings provided by industry/ private sector	State determined education and training at all levels	New innovative learning and education models lead to increasingly accessible quality, affordable education
Technologic Revolution – merge/partner with Tech	Humans merging with AI accelerates knowledge creation and learning and problem solving around Climate Change and other grand challenges	Proprietary knowledge and use of advanced technologies and AI Ethical concerns with an inadequate level of societal regulation of advanced technologies	Limited tech choices available, slower progress	Technologic innovations lead to an expansive array of new learning models and choices for learners However, navigating through the choices can be overwhelming
Transformation of Higher Ed	More efficient, shared governance amongst learners Transforms into learning experiences, modules, and outposts	Fewer unique, industry driven institutions, which are more prescribed in their offerings Continual training throughout working years	System transformed to targeted preparatory training and education to meet societal needs	Higher education struggles to transform with weight of existing legacy systems and assets Many institutions face competition from a growing array of new learning and education offerings
Affordability and Accessibility of Education and Learning	Most open, equitable, affordable, and accessible	Selective access for the few to advanced learning and education related to job/purpose (current or future) Student debt skyrockets for those not recruited by corporate-run higher ed institution	Public form affordable and accessible to those identified for higher education. Private form available to elite	Traditional Higher Ed becomes increasingly unaffordable and inaccessible, further reducing enrollment Many new affordable and accessible models proliferate, expanding learning opportunities to the shared collective.

YR: 2045	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Societal Value of Higher Ed (Teaching and Research)	Fully supported academic freedom Most prolific, non-filtered discoveries and solutions (creative)	Advancement and training valued and supported by industry, for industry Proprietary IP	Measured by ROI in preparation for predetermined roles/jobs Applied learning is highly valued	Traditional higher education is less valued New models for learning and education are growing in value
Power and Influence	Shared power and influence Diversity of thought, impact, contributions Unconstrained development	Industry players maintain power and influence and control and dictate innovation	Government driven though weakened by ongoing societal unrest and external disruptors (climate change...)	Innovators grow in power and influence in all sectors Learners grow in power and influence, empowered by access to lifelong learning and education
Societal Behavior and Divisiveness	Improved transparency and vetting of information, removal of misinformation Increasing appreciation for diversity of thought and ideas Reduced fear with access to education	Influenced by the industry players with power Ethical concerns with AI driven learning and education institutions	Societal unrest Inequities exacerbated by the impacts of climate change Divided values, beliefs, and politics exacerbated by AI produced misinformation	Societal behavior is influenced by increasing access to learning and education Key to overcoming divisiveness is proper vetting of misinformation
Social Equity & Inclusion	Equity and Inclusion is achieved and increasingly appreciated for how it has expanded creativity, knowing, and quality of life	Few in power provide access and opportunity based on their goals and criteria Diversity recognized as increasing creativity and innovation	Overall inequitable and exclusionary Inclusion and opportunities determined when young for talent development	Progress on achieving equity and inclusion as innovative/ disruptive models of learning take hold Traditional higher education continues to proliferate inequity
Learners (Gen Z, nontraditional, lifelong, AI)	Post-traditional, lifelong learners AI Augmentation Self-defined and monitored learning outcomes	Creatives, innovators prized Prescriptive (institution driven) learning versus student driven (utilitarian for most)	Identified tracks, heavily tested Ongoing learning available for jobs, roles requiring ongoing learning and education	Self-directed learning Student input into personalized learning journey User/market driven learning outcomes

YR: 2045	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Future Skills (work and jobs)	Creativity reigns Quick adaptability, Creative thinking, Collaboration skills are all highly valued	Industry programs to identify and train future workforce leads to robust talent pools Industry driven training and education for most promising talent	Clearly defined roles and careers, but lacking individual choice	Learners acquire desired skills and pursue their choice of careers, become lifelong learners Applied learning is highly valued
Role of Government	Learning is well funded and supported federally and globally Outcomes are self-measured and tracked by learners AI managed oversight and vetting systems to ensure removal of misinformation	Industry is primary funder and driver of advanced education and learning systems including prescribing and tracking of learning outcomes Public funding and oversight of foundational universal public education	Federal control and funding of education and learning including prescribing and tracking of learning outcomes Federal funding of early assessment and career path determination Govt. censorship of content	Federal funding and restrictive measures continue impacting public institutions All models must meet minimum learning outcome requirements Minimal oversight and controls over emerging, new models
External Disruptors - Climate Change and Demographic Shifts Post COVID	BIG problems are solved Bigger lens on the world because of community Rise of citizen scientists	Focus of many new and emerging markets Impacts geographic and technologic investment in learning platforms and campuses	Extreme disruptors and resultant catastrophic impacts (climate change, demographic migrations, biodiversity loss, AI impacts on social media)	Focused attention on targeted issues within climate change Lacking a unified, in-depth problem solving, innovations emerge in response
Environmental Sustainability	Not Reactive = proactive planning with resources Closed loop, carbon free systems are the norm	Progress based on goals of those in power	Unsustainable conditions Focus on emergency response and building resiliency	Progress is made on UN Sustainable Development Goals