Prepare to Be Transformed

Considering the Future State of Education

Presenters
Mark Vander Voort, AIA, LEED AP
Nathan Butler, AIA, LEED AP
Adelia Schleusz, RID, IIDA

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World Disrupted

Reinventing, reshaping ALL existing business/services

Monetizing services/assets

Transforming customer expectations/preferences

A coming GIG Economy

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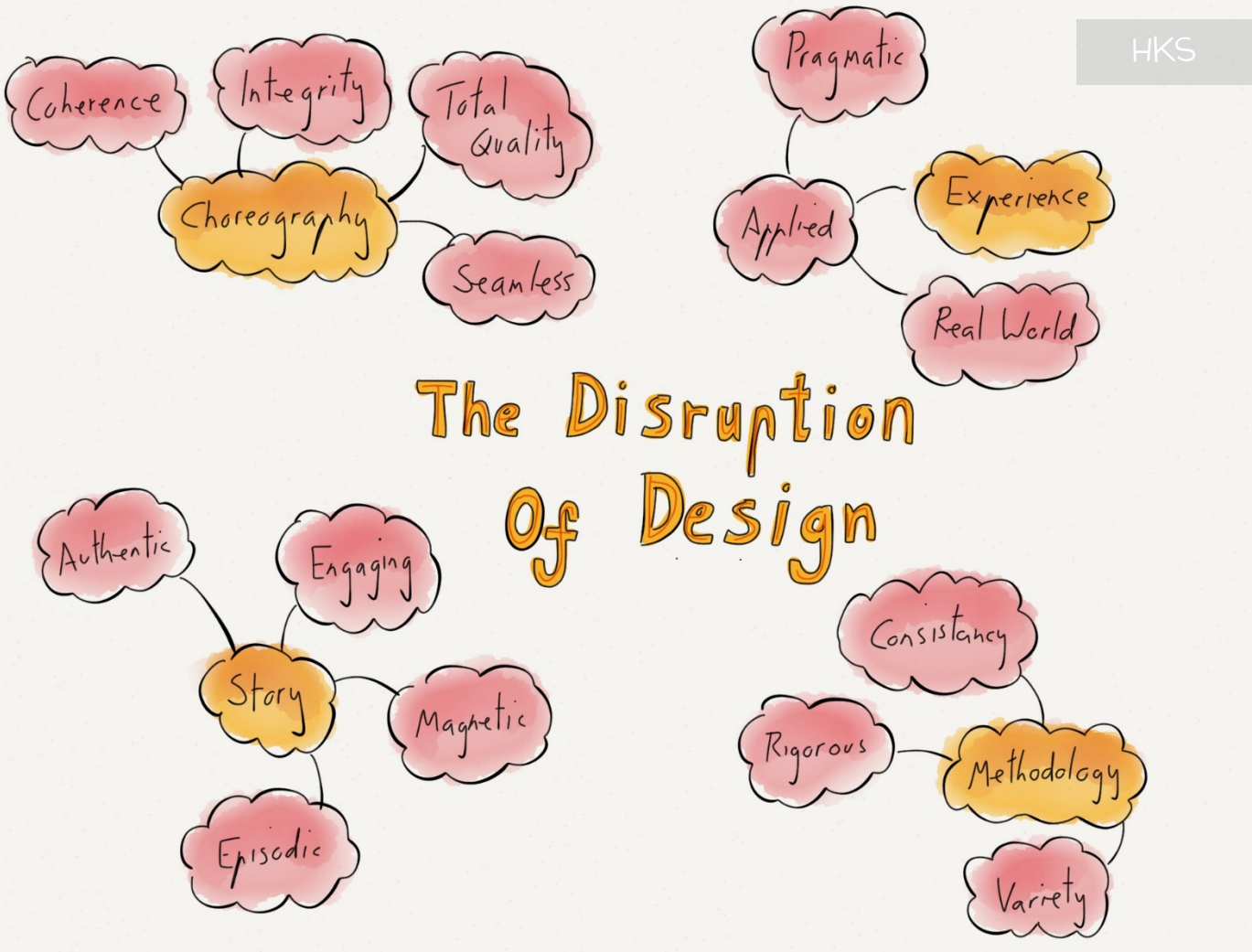
Differentiate
Current State/Future State

Distill Top Six Issues

How will these considerations affect design-thinking?

Sense of Awareness and Urgency



Current State EDU Issues?

Embracing Technology

School Climate & Culture

Health & Wellness

Boosting Equity

(Digital) Citizenship

Responsible Stewardship

Safety & Security

Positive Behavior Interventions

Early Education Initiatives

New School Leadership Models

Teacher Engagement

Facility Obsolescence

Appropriate Funding

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Learning from the Past

Factory Model to Student-Centric

Old	Today
teacher-centered	learner-centered
rote learning	problem-based learning
isolated facts	real world context
content-oriented	process-oriented
limited access to information	information widely available
reactionist problem solving	holistic problem solving
competitive	collaborative
single comprehensive program	customized learning programs
focused on efficiency	focused on effectiveness
departmental/disciplinary	interdisciplinary
single learner group	multiple learner groups
clear community boundaries	permeable community boundaries
generic environment	inspiring environment
Rigid boundaries	permeable boundaries

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Skills Needed

Digital Literacy

Media Manipulation

Global Competition

Asynchronous Communication

Social Networking

Articulate & Dramatize

Persuasion/Debate

Creativity

Problem-Solving

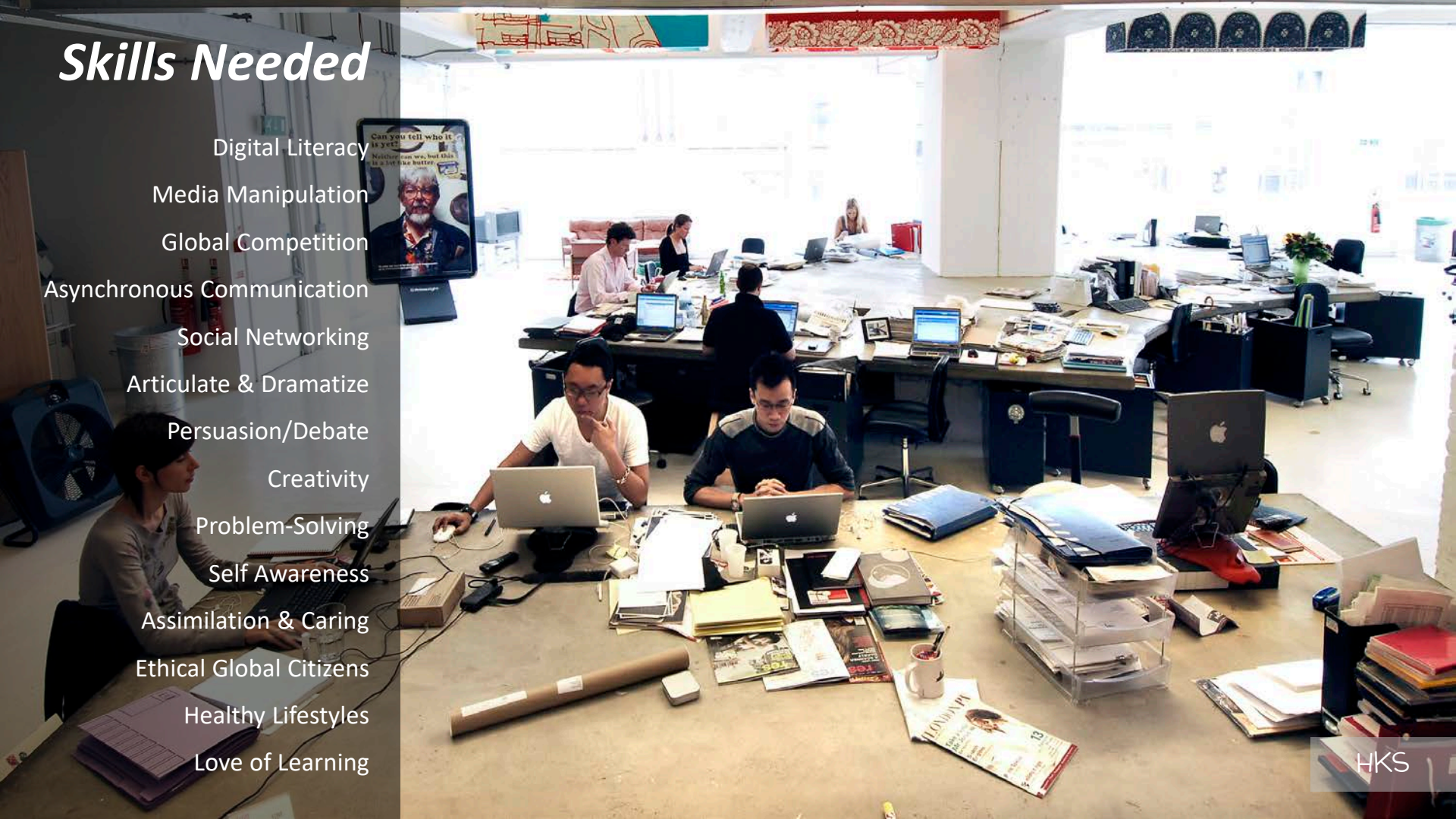
Self Awareness

Assimilation & Caring

Ethical Global Citizens

Healthy Lifestyles

Love of Learning



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Future State
EDU Issues?
Pervasive Technology
Lifelong Upskilling
Unbundling EDU Ecosystem
School Choice & Consumerism
Wrap-Around Services
Globalization & Competition
EDUCATION
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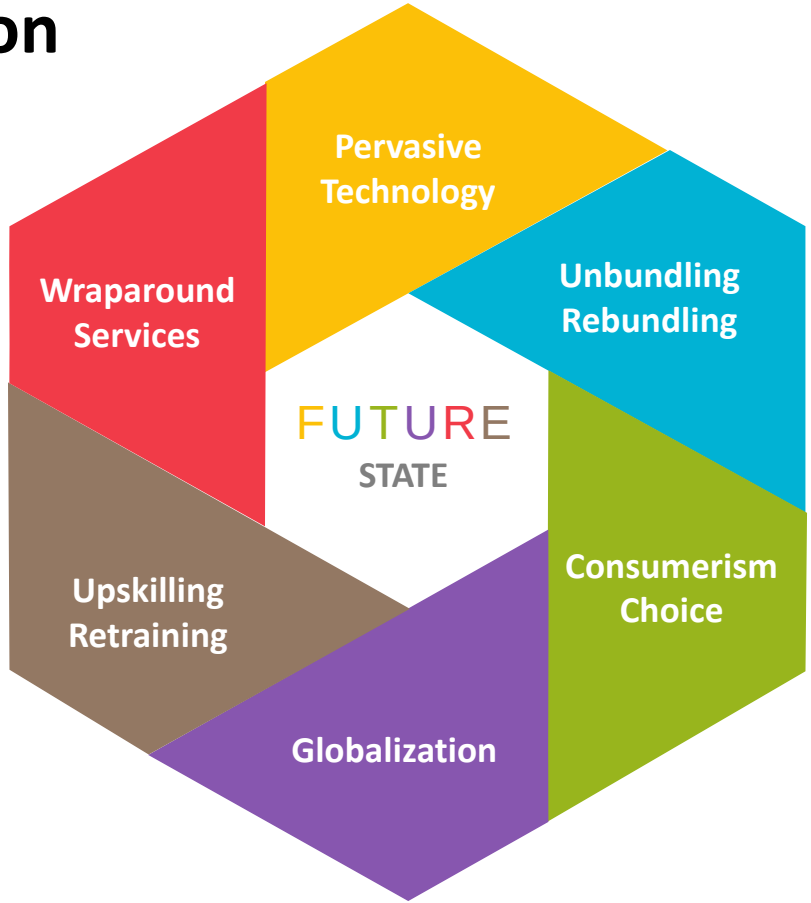
Future State of Education

Six Disruptors:

- Interrelated
- Interdependent
- Inter-supportive



Pervasive Technology

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Pervasive Technology - Definition

5G Speed/Bandwidth/Processing Power

Enhanced Communication, Convergence/Interoperability

Embedded Everywhere, Information Access/Awareness

Cognitive Analytics

Digital Twins, Telepresence, Immersive Experiences

Extended Reality

Micro-transactions, Blockchain, Frictionless Business

Gamification, Robotics

Digital Security/Citizenry/Privacy

Generational Adaptation/Acceleration

Low Latency Delays/Responses

Smart Homes/Rooms

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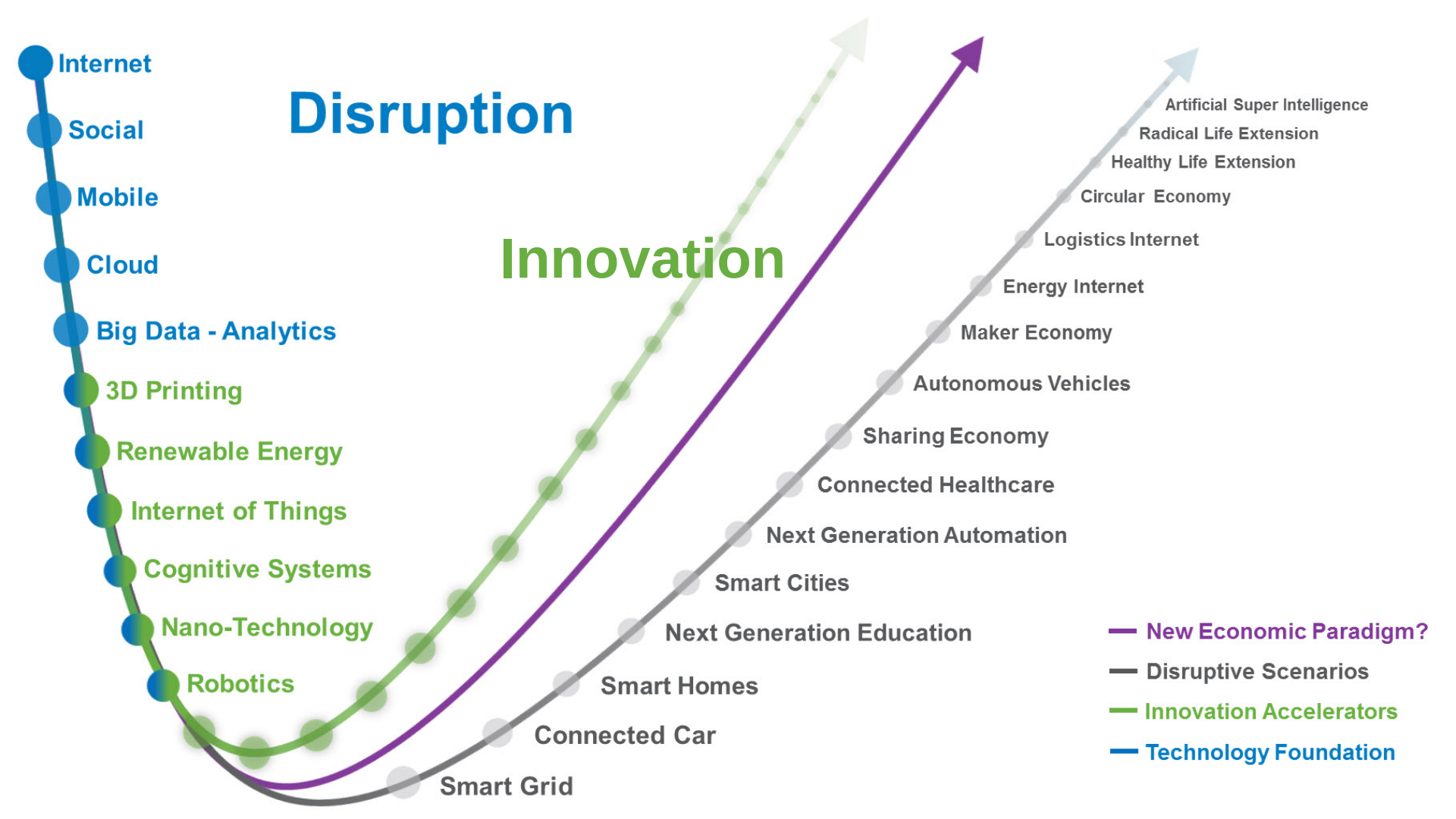
Disruption
Innovation
Internet
Social
Mobile
Cloud
Big Data - Analytics
3D Printing
Renewable Energy
Internet of Things
Cognitive Systems
Nano-Technology
Robotics
Smart Grid
Connected Car
Smart Homes
Next Generation Education
Smart Cities
Next Generation Automation
Connected Healthcare
Sharing Economy
Autonomous Vehicles
Maker Economy
Energy Internet
Logistics Internet
Circular Economy
Healthy Life Extension
Radical Life Extension
Artificial Super Intelligence
New Economic Paradigm?
Disruptive Scenarios
Innovation Accelerators
Technology Foundation

Pervasive Technology –Issues to Consider

Untapped, Customer-Driven Possibilities

Higher Customer Expectations

New Ways of Streamlining Business

Managing Facility Environments

Performance Tracking, Utilization, Optimization

Improved Decision-Making

BIM Life-Cycle Management

New Entrants & Model Providers

Greater Competition

Achieving More with Less

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Pervasive Technology - Expectations

New Forms of Human Computer Interaction (HCI)

Wearable Devices – Constant Information Access

Digital Literacy - Hackathons, Maker Sessions, Publishing

Immersive Experiences – Anytime, Anywhere, Anyscale

Cross Discipline, Collaborative Friendly Spaces

New Revenue Streams & Means of Monetizing

Crafting Rich, Multi-Media Communications

All Things Internet – “The Room is the Computer”

Blockchain Technologies – Badging, Certifications

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Pervasive Technology - Response

Invest in Behavioral Research

Become Application Knowledgeable

Integrate Machine Learning Algorithms

Enhance Brand Through Campus “Hot-Spot” Icons

Spatial Analysis & Reutilization

Bring Institutional “Connected World” to Reality

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Lifelong Upskilling

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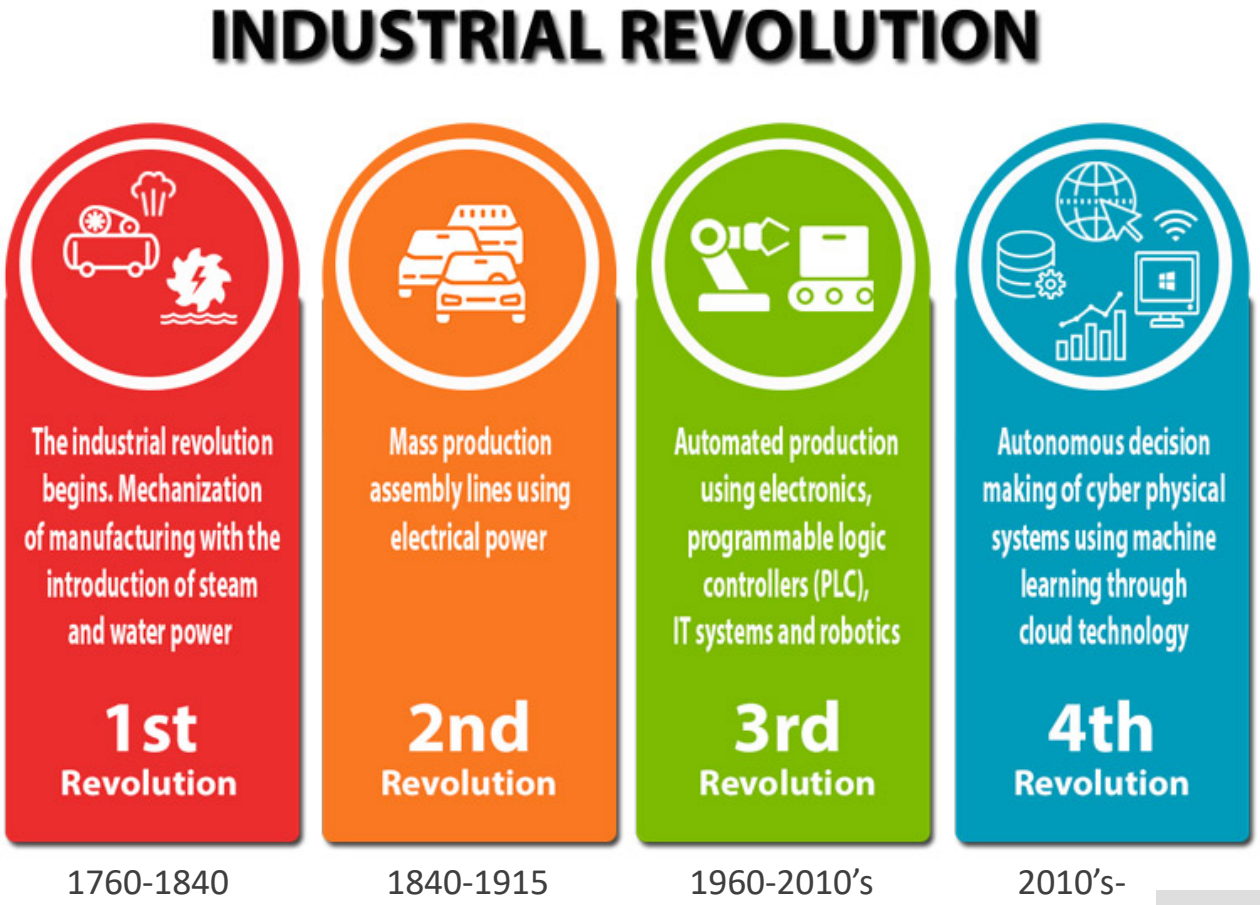
These were gradual shifts, yet they disrupted lives and dramatically transformed whole societies.



FOURTH INDUSTRIAL REVOLUTION

Design of these systems?

Management of systems?

Harness resulting insights?

Teaching these systems?

Institutions or corporations?

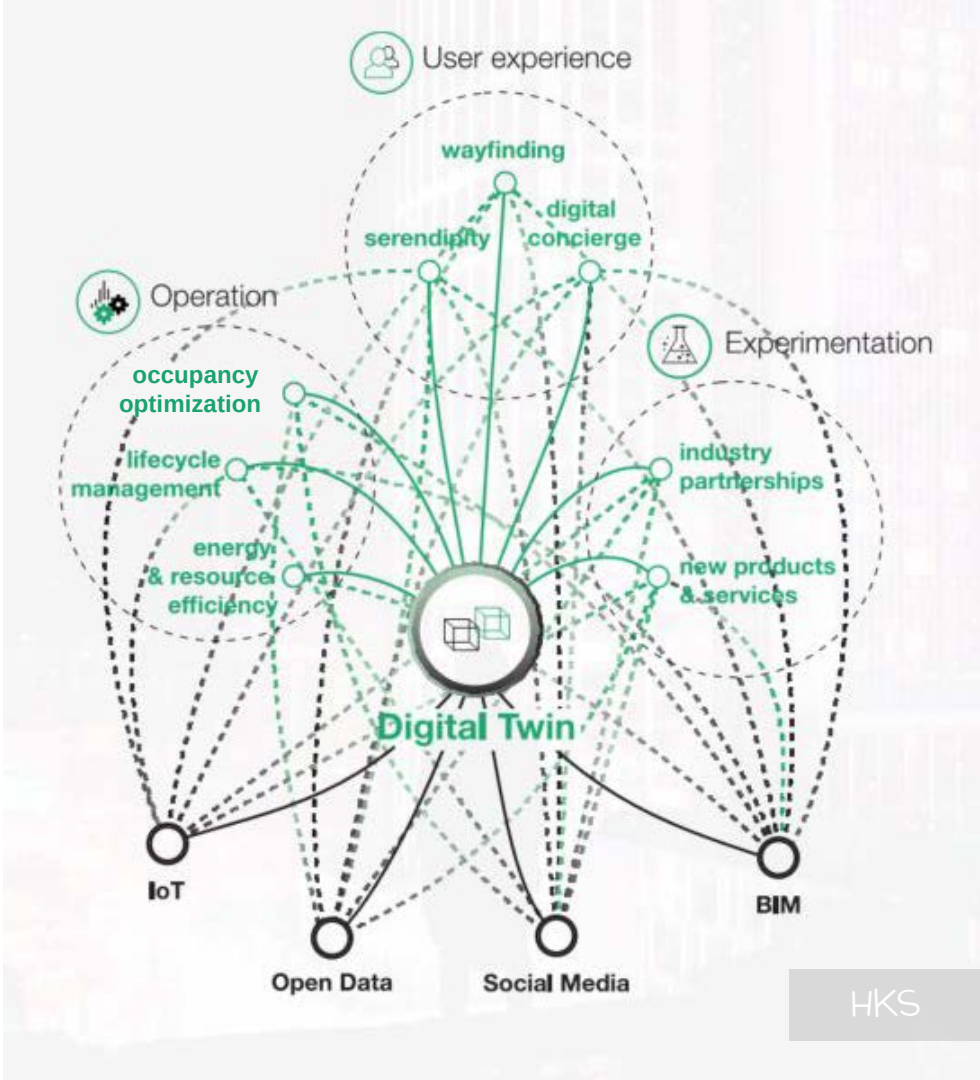
Future Campus Planning

Data Harvesting & Utilization

Data harvested from multiple sources enhances campus performance.

Layers of Campus Change

- Site
- Structure
- Skin
- Services
- Space Utilization
- Students
- Stuff



Lifelong Upskilling

Evolving Skills Base to Underpin Continuously Emerging Technologies

Time it Takes to Close Skills Gap through EDU is Growing

Half-life of a Learned Skill is Estimated to be Five Years or Less

A Skill Learned Today Will be Half as Valuable in Just Five Years

Lifelong Learning is Paramount for Future Worker

Traditional Jobs are Changing or Disappearing

Workers Must Reinvent to be Marketable, Relevant

Reskilling is More Efficient and Effective than Rehiring

Technology Advancement Outpacing EDU's Ability to Deploy

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Lifelong Upskilling

Living Longer, Working Longer

Environments will Fuse Physical, Digital, and Biological Worlds

Value creation through digital services and applications

Algorithms will Enable Fastest Smartest Processing of Data

Markets will Become More Global & Universal

Tasks that humans still do better than machines:

- Communication, Empathy, Creativity, Strategy, Questioning, Visioning, Dexterity

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Lifelong Upskilling

Schools Must Become “Garages and Farms” of the Future.

New Infrastructure for Emerging Interdisciplinary Fields

- Biotechnology, Nanotechnology, Robotics, and AI.

Companies Must Partner on Continuing Education Programs

- Will Change Physical Space Needs for Both

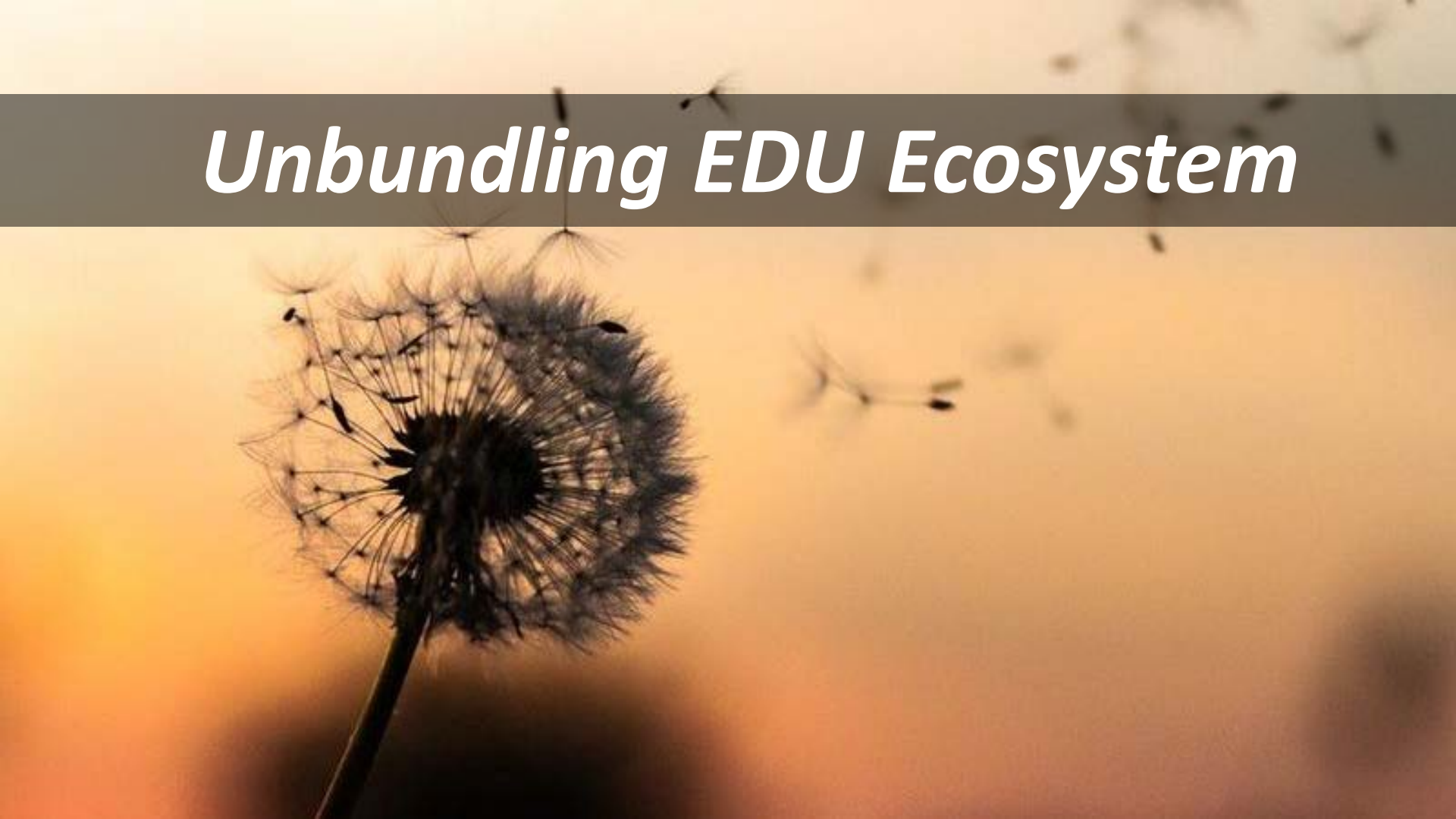
Leverage Interdisciplinary Expertise to Guide Paradigm Shift.

- Experts in Education, Psychology, Technology and Design

Need for Built-In Flexibility

- Technology-Advanced Life will be Less Predictable Than Before

Unbundling EDU Ecosystem



Unbundling EDU Ecosystem

Unpackaging Traditional Offerings

Away from Seat-Time, Credit Hours to Subject Mastery Instead

Shift Toward More Organic, Fluid, Dynamic, Diverse Programs

Move Toward New Access, New Certifications

- Badging, Micro-degrees, Blockchain

New Entrants in EDU Marketplace

Students Design Their Own Path

Opens Doors for Non-Traditional Learners

Road to Personalized Learning & Individual Trajectories

Unbundling EDU Ecosystem

Blended learning approaches

Easily monetized

Micro-credentials – certifications, badging, nano-degrees

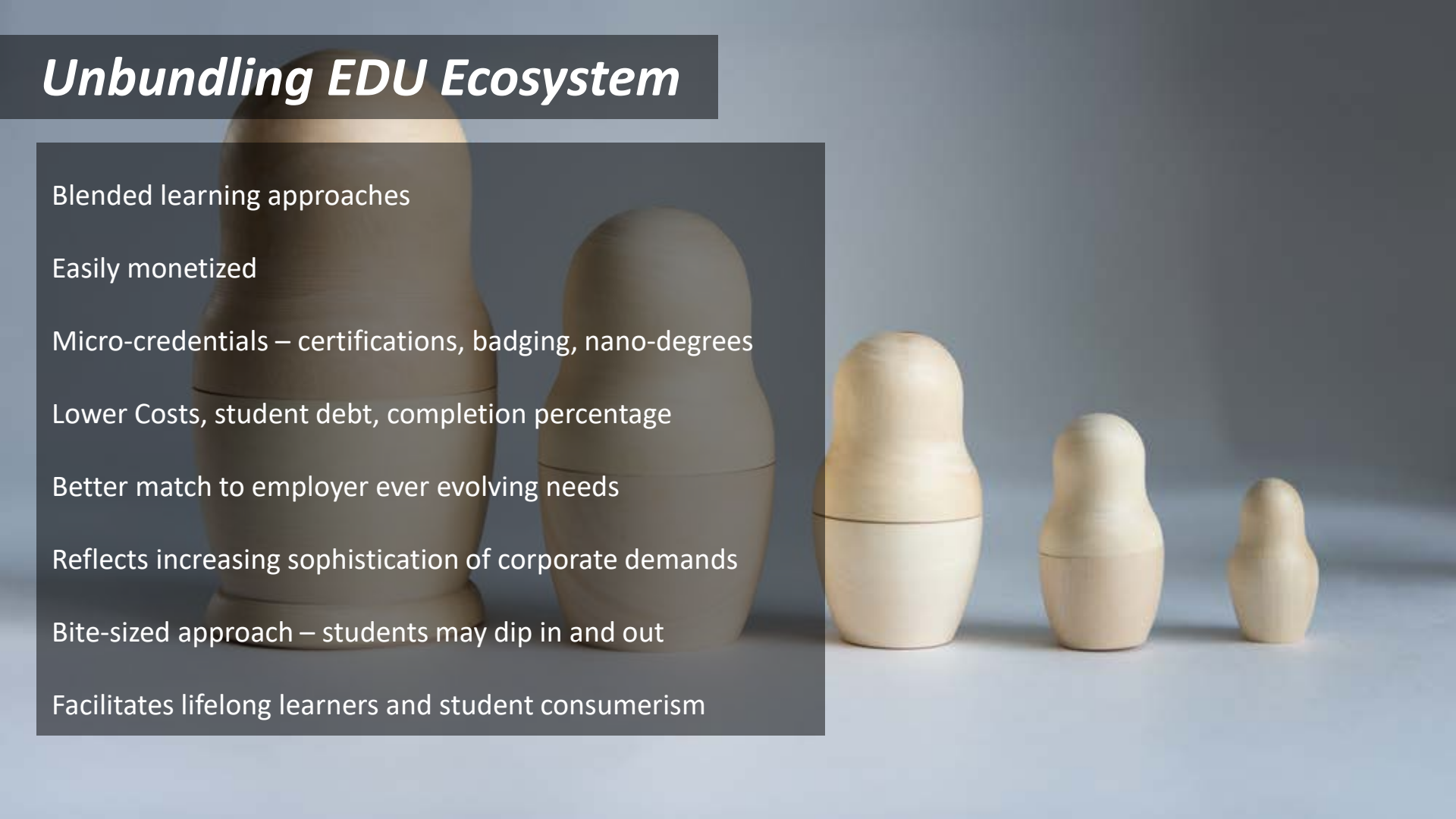
Lower Costs, student debt, completion percentage

Better match to employer ever evolving needs

Reflects increasing sophistication of corporate demands

Bite-sized approach – students may dip in and out

Facilitates lifelong learners and student consumerism



Unbundling EDU Ecosystem

Become Familiar with Inventive Spatial Formats

MOOC's and SPOC's (Small Private On-Line Course)

Smaller Spatial Footprints Ultimately Required

Learning Everywhere – Outside Traditional CR

Study Innovative Exemplars

Identify/Follow Industry Disruptors

Increasing Choice & Consumerism

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Increasing Choice & Consumerism

CHOICE in Education for Families & Students

Age of Mass Customization - Exploded in Recent Years

New Needs, Interests, & Aspirations

Continued Disruption Ahead for Decades

New Markets of Non-Traditional Students

Lifelong Learners will Direct Their Own Path

GIG Education

Increasing Choice & Consumerism

New Entrants are Challenging Status Quo

Students Analyzing ROI on Student Debt

Student Choices vs Well-Rounded Education

EDU Institutions No Longer Impervious to Change

Corporations Invoking In-House Training

6000 Charter Schools, 43 states, 6% students

Public schools competing through new models

Private school options – 10% students

New School Ventures – Progressive Alternatives

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Increasing **Choice & Consumerism**

Rising Demand for Relevant Choice

Lifelong Learners will be Repeat Customers

Opportunities for More Innovative Designs

Higher Ed Alternatives will Flourish

Who is Best in Shaping Curricula?

- Institutions or Corporations

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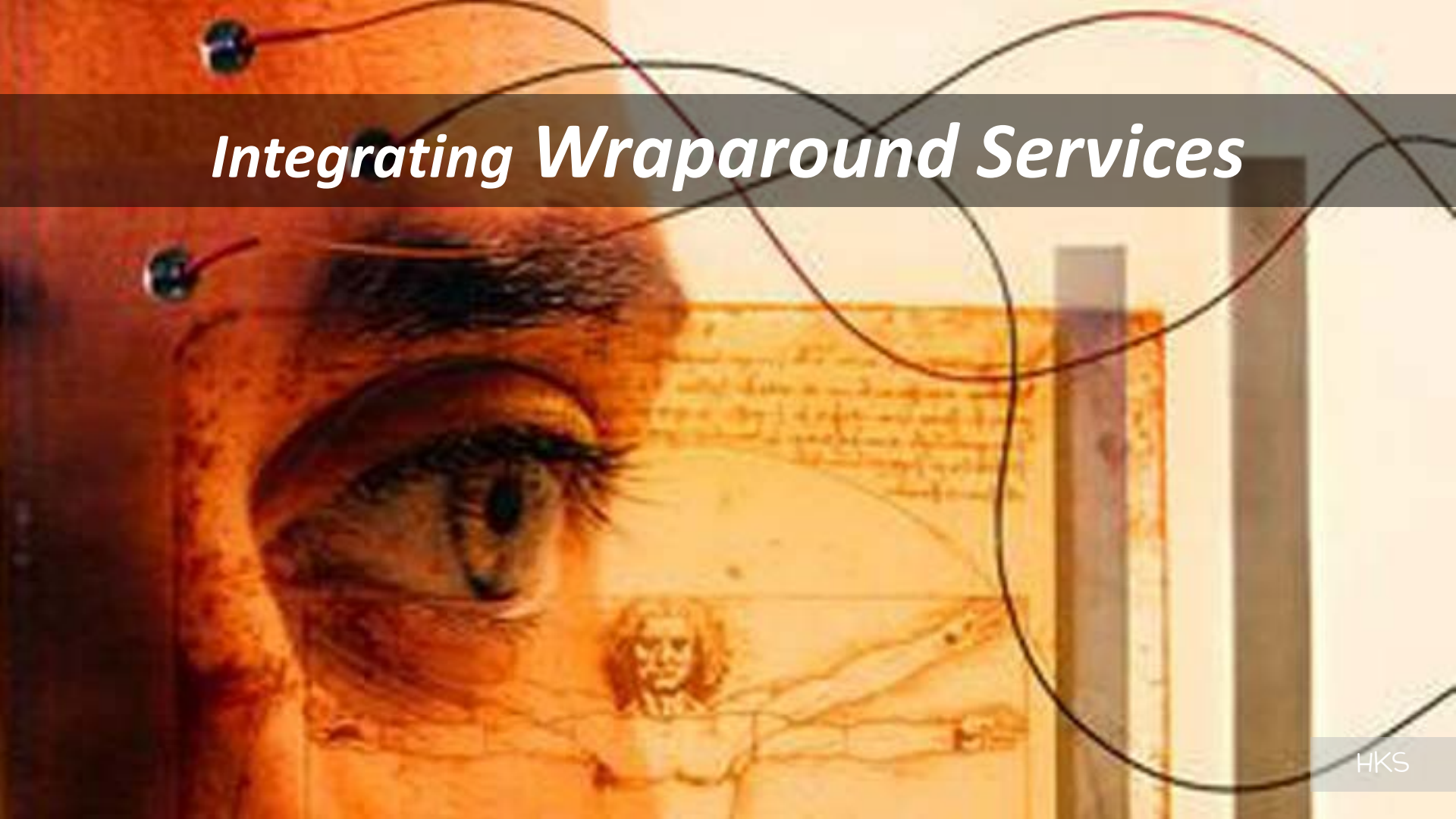
Integrating Wraparound Services
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Integrating ***Wraparound Services***

Intensive, Individualized Care Management Process for Youths with Serious or Complex Needs.

Puts the Child or Youth and Family at the Center.

Social-emotional Wellbeing and Mental Health of Students Increasingly on Par with Academic Success

Demand for Mental Health Services is Poised to Continue Solutions to Ensure the Vitality of the Whole Student.

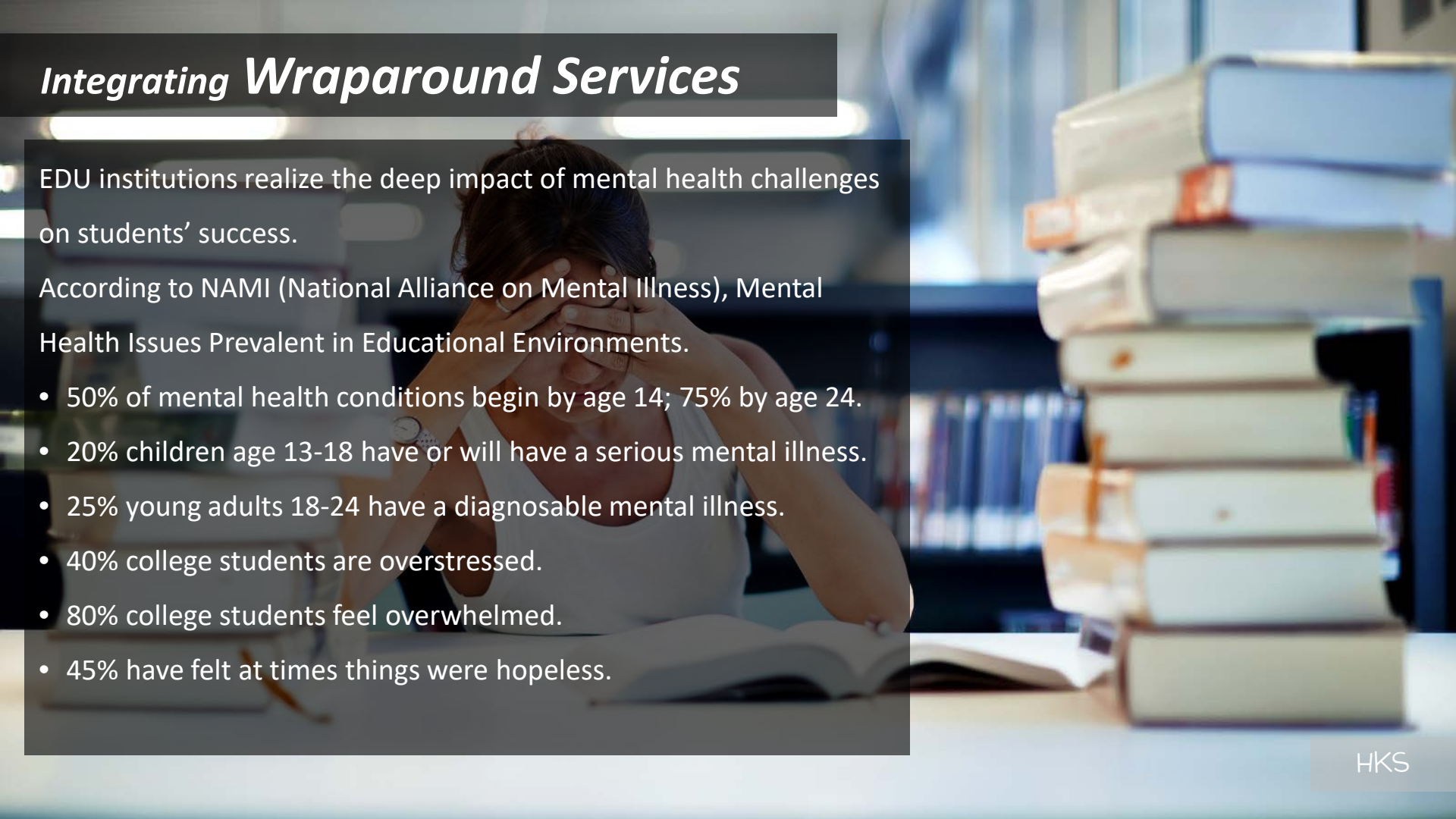
Can Extend to Student Recruitment & Orientation

Integrating ***Wraparound Services***

EDU institutions realize the deep impact of mental health challenges on students' success.

According to NAMI (National Alliance on Mental Illness), Mental Health Issues Prevalent in Educational Environments.

- 50% of mental health conditions begin by age 14; 75% by age 24.
- 20% children age 13-18 have or will have a serious mental illness.
- 25% young adults 18-24 have a diagnosable mental illness.
- 40% college students are overstressed.
- 80% college students feel overwhelmed.
- 45% have felt at times things were hopeless.



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Integrating ***Wraparound Services***

Students are not seeking help at a high enough rate

Concern of stigma is the number one reason students do not seek help.

Lower GPAs, drop out or unemployment more likely

Critical need for the following services on campus:

- Mental health training for faculty, staff and students.
- Suicide prevention programs.
- Peer-run, student mental health organizations.
- Information during campus tours, orientation, health classes and other campus-wide events.

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Integrating ***Wraparound Services***

Establish Relationships with Leading Organizations in Mental Health

Seek out Partnerships with Counselors and Psychologists in Education.

Research Emotional Wellbeing and Relationship to Physical Environment

Emotional Wellbeing and Relationship to Student Achievement.

Invoke Cross-disciplinary Expertise.

Human-behavioral Research to Deliver Innovative Solutions that Embody

Healthy Environments and Outcomes.

Develop Tools and Measure Current state of Well-being.

Demonstrate Strategies that are not Related to the Built Environment.

Integrating ***Wraparound Services***

Ever-Growing Awareness to Promote Emotional Well-Being

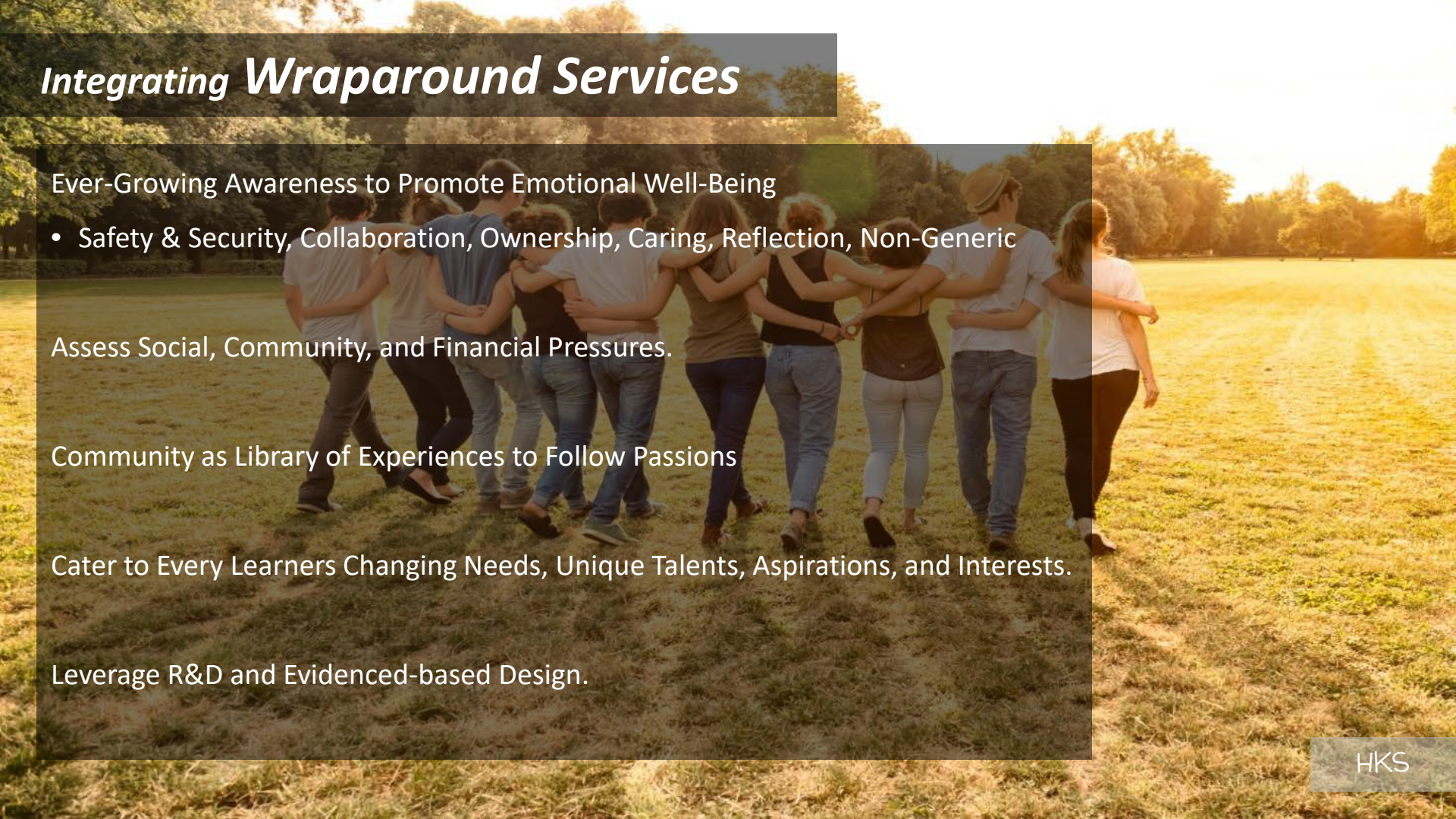
- Safety & Security, Collaboration, Ownership, Caring, Reflection, Non-Generic

Assess Social, Community, and Financial Pressures.

Community as Library of Experiences to Follow Passions

Cater to Every Learners Changing Needs, Unique Talents, Aspirations, and Interests.

Leverage R&D and Evidenced-based Design.



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Globalization & Competition

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Globalization & Competition

Growing interconnectedness and interdependence

Continental interdependence

Demographic/Economic Shifts

Emerging Economies & Markets

Rapid Urbanization & Automation

Employer Demands vs College Knowledge

Lack of EDU Supply, but Growth in Demand

Access Equity

Student Mobility

Rise in Non-Traditional Students

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Globalization & Competition

Internationalization Strategies - Education for All

Talent Pool Difference - by 2030, STEM students = 75% BRIICS

Global Digital Ethics, Privacy, Security, Policing

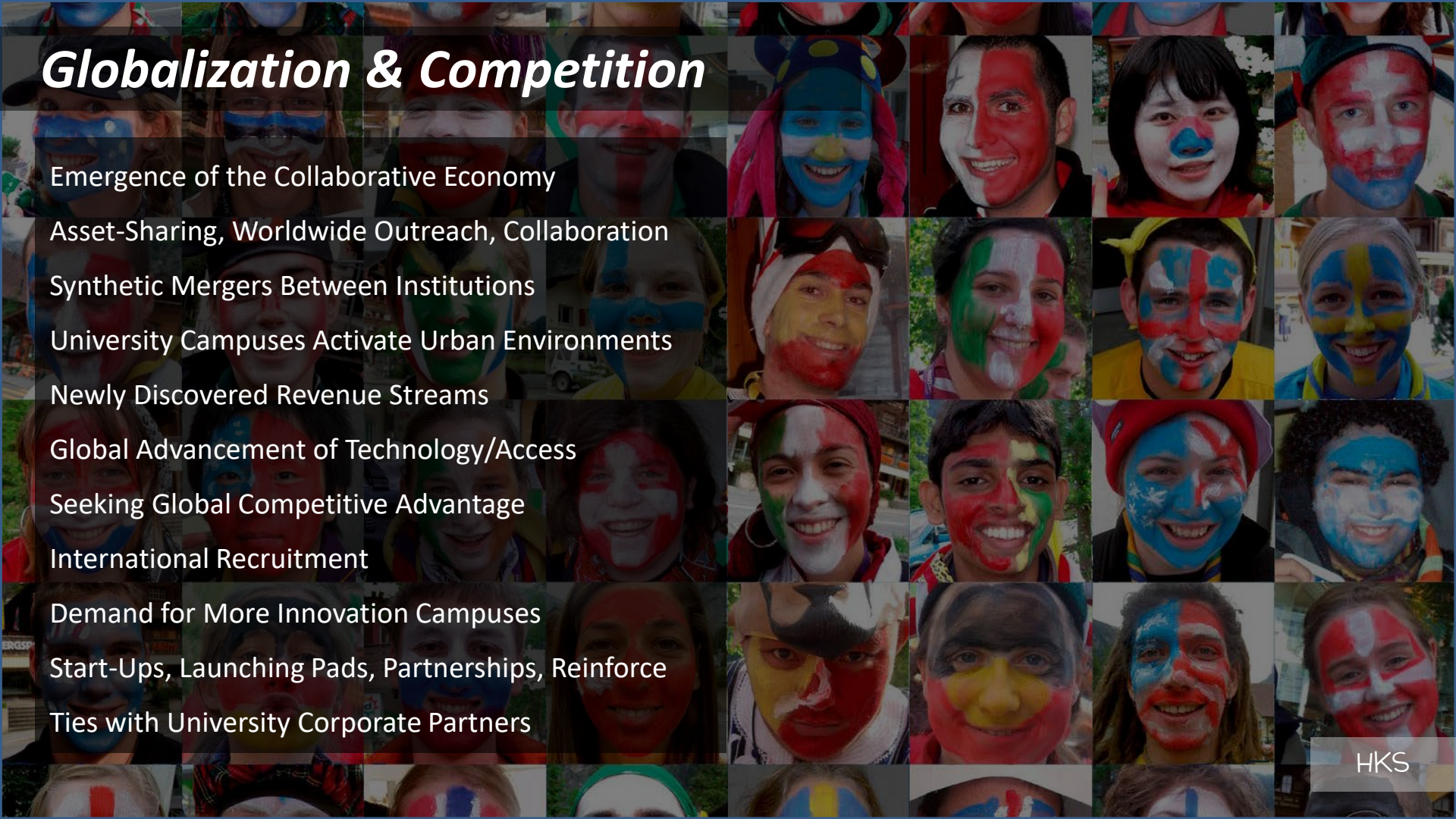
Dwindling Public Funding for Institutions

Dependence on Emerging Economies for Growth

Institutions will need:

- Multi-Sector Collaboration
- Emphasizing Brand & Value
- Focus on Student Experience
- Consolidations/Partnerships

Globalization & Competition



Emergence of the Collaborative Economy

Asset-Sharing, Worldwide Outreach, Collaboration

Synthetic Mergers Between Institutions

University Campuses Activate Urban Environments

Newly Discovered Revenue Streams

Global Advancement of Technology/Access

Seeking Global Competitive Advantage

International Recruitment

Demand for More Innovation Campuses

Start-Ups, Launching Pads, Partnerships, Reinforce

Ties with University Corporate Partners

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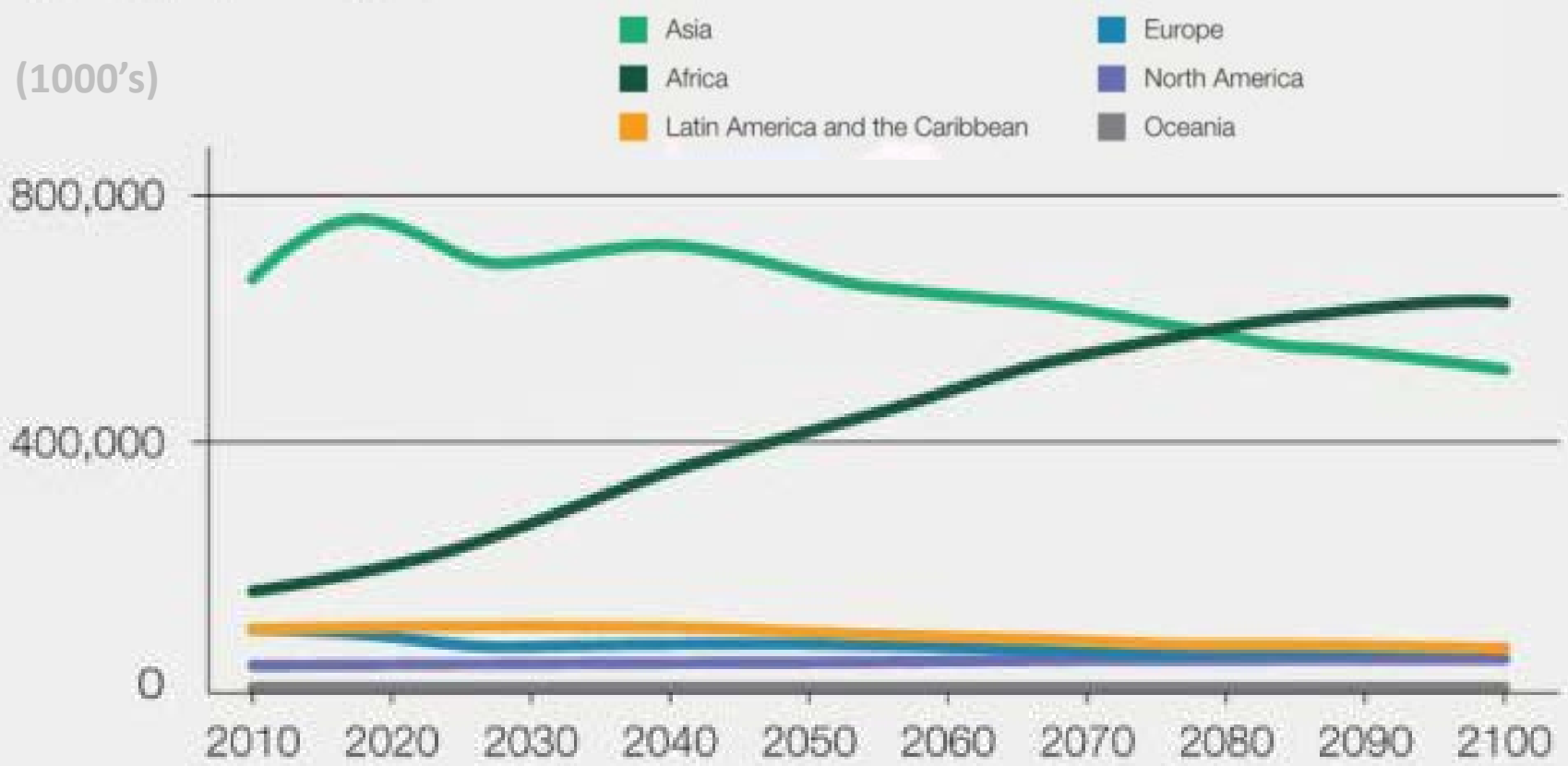
Changing demographics

Youth (aged 15–24) population projections per region, 2010–2100



Design Industry Response

Improve as Change Agents - be more Future-Cognizant.

Comprehend Merging of Physical & Virtual World/Experiences

Understand/Advise/Influence Client Business

Rehabilitate/Repurpose Underutilized, Underperforming Space on Campus

Design for Natural Amenities - Human Health & Wellbeing

Invoke Research & Cross Disciplinary Expertise

Intermediate Between Institutional & Corporation Partners

Prepare to Accommodate the Greater Number

Envision/Experiment/Invent New Spatial Typologies & Utilizations

Invest in Holistic Sustainability – Resource, Social, Economic

Build Empathy through Observation of School Environments and Activities.

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Design & Construction Technology

Collaboration/Model-Sharing

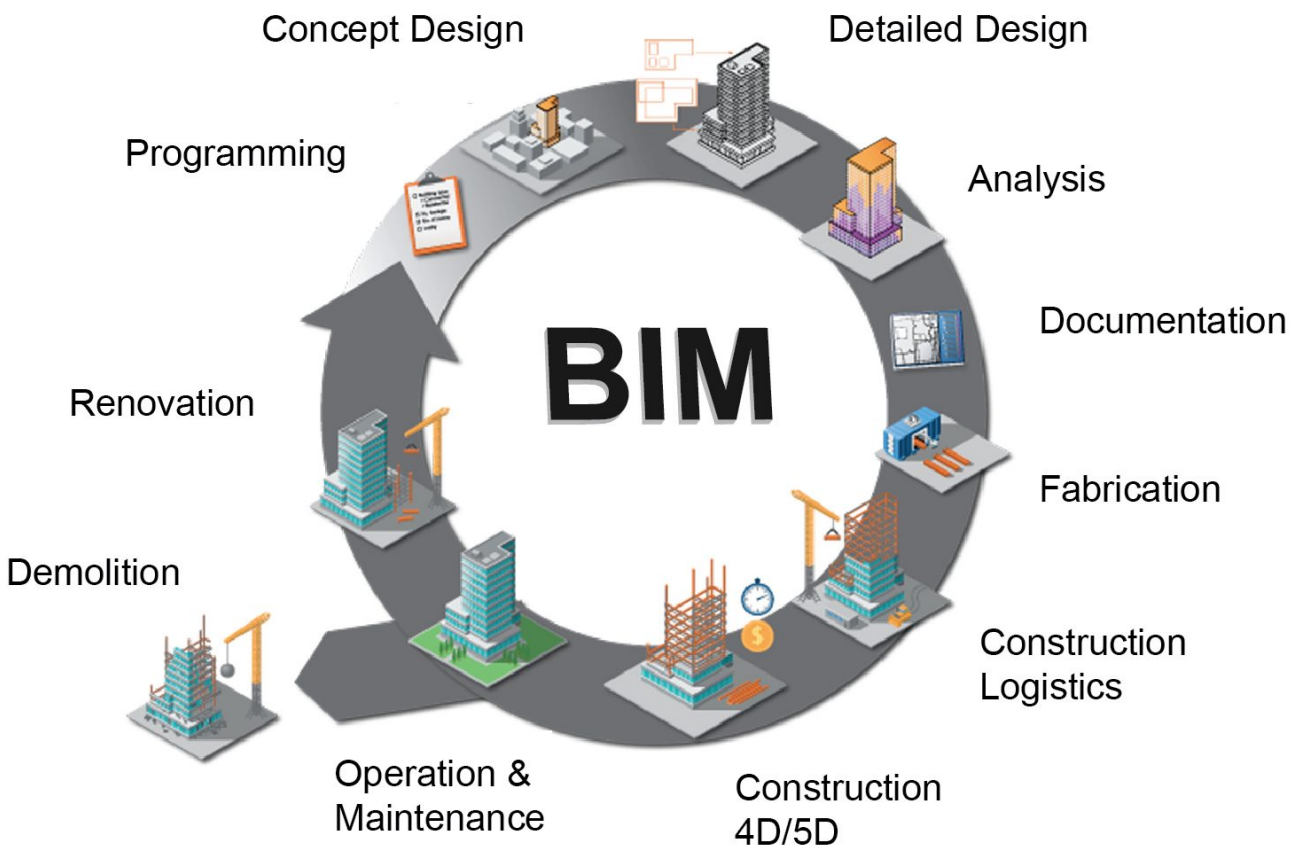
Prefabrication/Modularity

Procurement

Facility Management

Energy/Utilization Models

Digital Twins



Design Measures Of Excellence

Design for Integration

Design for Community

Design for Ecology

Design for Water

Design for Economy

Design for Energy

Design for Wellness

Design for Resources

Design for Change

Design for Discovery

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Managing Societal Change
The Age, Period, Cohort Model

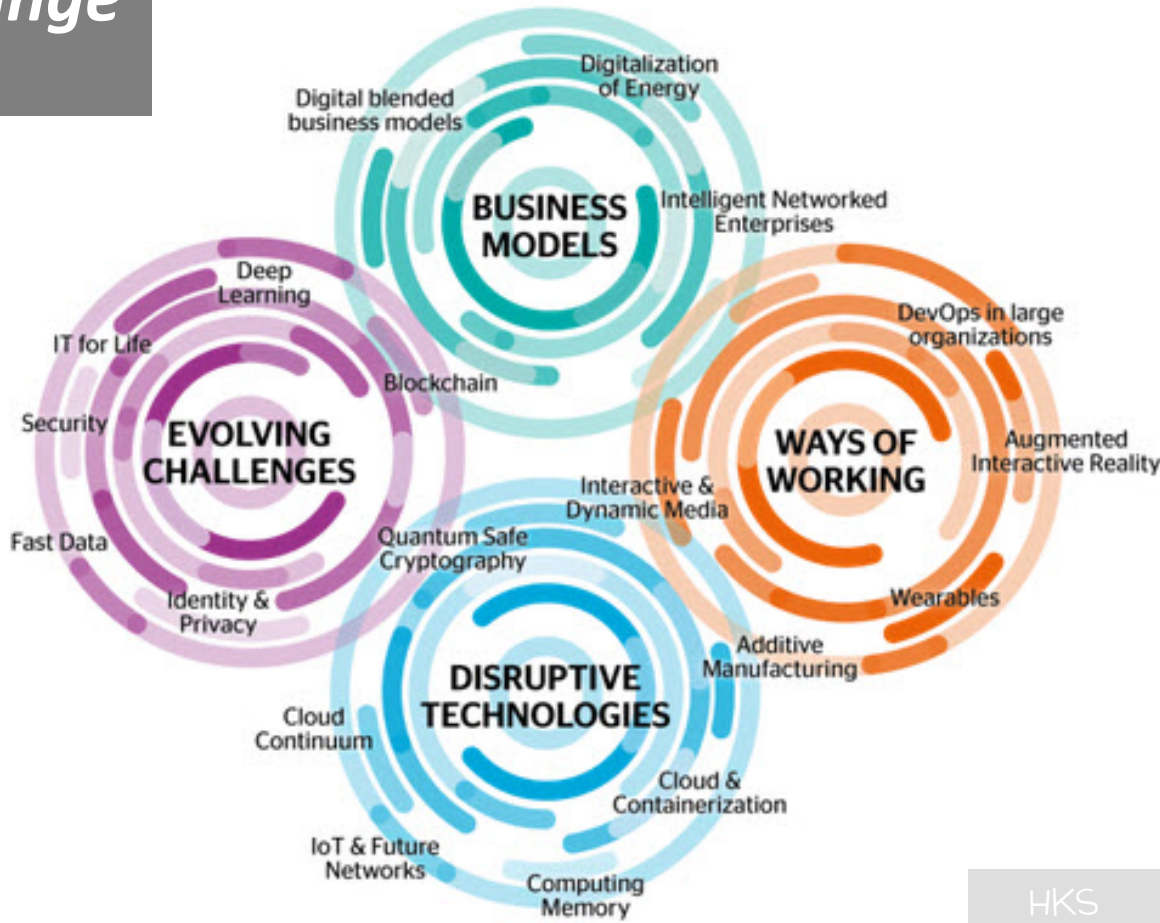
Youth is an impressionable period of life

- *Individuals maximally open to influences of the social environment.*
- *People acquire their world views (values, beliefs, and attitudes) during these impressionable years and maintain those views over most of their lives.*

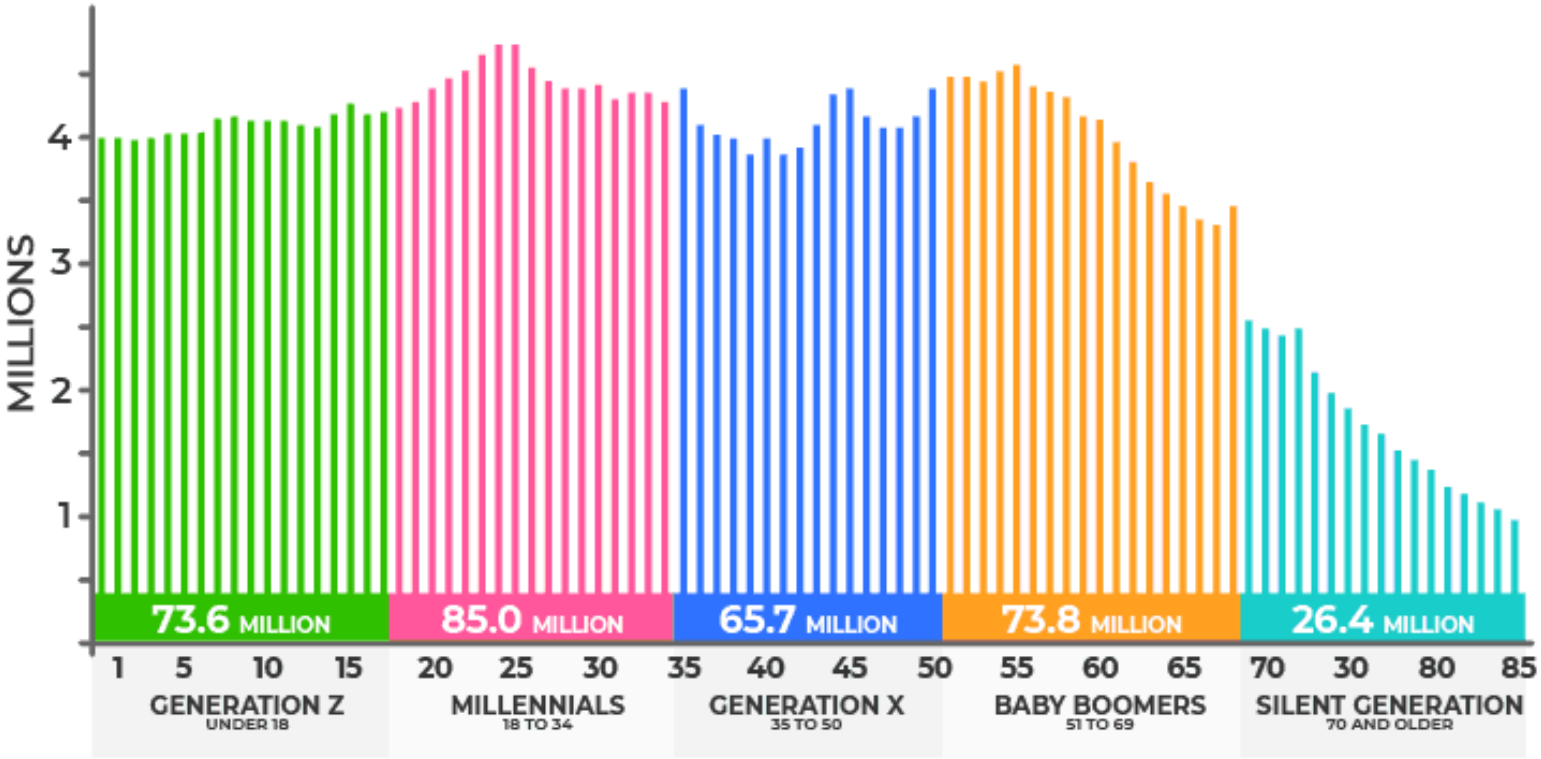
Unique cohort experiences are formed due to the distinctive influences of historical "period" events.

Clear differences across birth cohorts in typical beliefs and attitudes.

Public opinion and social norms change gradually in the direction of the more recent cohorts.



U.S. POPULATION BY AGE



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A Journey of
Continuous Improvement
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Globalization & Competition

Diversifying in Response to Global Demand

- *Exclusivity to Accessibility*
- *High Cost to Low Cost*
- *Selective to Inclusive*
- *Full-Time to Part-Time*
- *On-Campus to On-Line*
- *Demand for More Innovation Campuses*