



**Preparing tomorrow's workforce
for the Fourth Industrial Revolution**

For business: A framework for action

Executive summary

Contributors

This report is the result of a collaboration between Deloitte Global and the Global Business Coalition for Education in support of the Youth Skills and Innovation Initiative.

Deloitte Global

Katie Armstrong
Michele Parmelee
Stasha Santifort

The Global Business Coalition for Education

Jamira Burley
Justin W. van Fleet

Deloitte Global and the Global Business Coalition for Education would like to acknowledge the written contributions and support from the following colleagues in **Deloitte US:**

Maggie Koziol
Rebecca Greenberg

Jeff Schwartz
Renee Tetrick

The Global Business Coalition for Education would like to thank the Youth Skills and Innovation Commission and members and the Youth Skills Network for their support.



The Fourth Industrial Revolution and changing landscape of youth globally

Millions of youth around the world face the challenge of securing meaningful employment. The growing proportion of youth lacking the basic skills to participate in the workforce correlates to unprecedented rates of youth unemployment and underemployment. Concurrently, employers are struggling to find and retain talent aligned to their human capital needs, creating resource shortages within increasingly complex and competitive landscapes. The uneven distribution of talent and employment opportunity represents a global mismatch in supply and demand, leaving youth unprepared for the workforce and businesses without the resources they need.

At the same time, the Fourth Industrial Revolution (4IR) — the marriage of physical assets and digital technologies—is transforming how and where work is done. For today's 1.8 billion global youth who are between the ages of 15 and 29, this revolution will significantly shape their roles as the future workforce, consumers, and competitors. Automation, digitalization, artificial intelligence, and robotics mean businesses should rethink how and where work is done. These developments have the power to reshape their organizational structures, cultures and processes. As businesses consider the implications of the future of work, they should engage youth, who can provide a powerful voice to inform business strategies in areas such as workplace needs, culture, and engagement.

This report highlights opportunities for the business community to contribute to developing and growing the workforce of the future, focusing on opportunities to reach and support youth globally. The business community has an important role in contributing to the United Nations' Sustainable Development Goals (SDGs), a role many companies are already taking steps to fulfill. Two SDG goals are the focus of this report: inclusive and quality education for all and promote lifelong learning (SDG 4), and inclusive and sustainable economic growth, employment and decent work for all (SDG 8).

This executive summary document, and the full report, present findings and recommendations resulting from literature reviews and interviews with stakeholders across the ecosystem—youth, workforce training organizations, the business community, and researchers—and a global youth survey reaching more than 500 individuals. Frameworks and action steps for the

business community to prepare the next generation for the future of work are provided to guide activation of these recommendations.

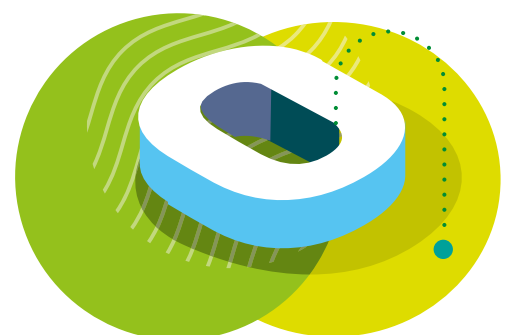
The report assesses *when* and *how* the employees of tomorrow are preparing for 4IR, as well as *who* is responsible for preparing them.

The report poses four challenges to the business community to consider:

- 1. Reimagine 4IR as a *unique opportunity to be welcomed*, not a *problem* to be confronted**
- 2. Reposition** discrete and disconnected programs as a **systemwide, unified set of approaches**
- 3. Realign** toward achieving **both scale and impact**, rather than framing solutions as scale *versus* impact
- 4. Reframe the possibilities for marginalized youth**, including those who historically have been difficult to reach with particular attention to women and girls

Complementary to these challenges, the report provides four recommendations for the business community to commit to:

- 1. Align stakeholders' objectives and approaches:** Work with the broader ecosystem to align goals and outcomes for impact.
- 2. Engage in public policy:** Strategically engage in public policy through dialogue, advocacy, collaboration, and influence.
- 3. Develop promising talent strategies:** Analyze current talent strategies—particularly those focused on youth or under-represented populations—and implement best practices to promote inclusivity and innovation, and drive economic return through differentiation.
- 4. Invest strategically in workforce training approaches:** Evaluate, invest, and promote workforce training programs that align with your corporate social responsibility goals, talent practices, skill needs, and corporate culture.



What skills are needed for 4IR?

As the business community considers the ecosystem and models that exist to support education and skilling, a focus on **four skill categories** is recommended to support success in 4IR: workforce readiness, soft skills, technical

skills, and entrepreneurship. Building on these four skills, continuous lifelong learning is critical to help youth adapt and participate in the changing landscape of work.

Skill Categories	Definition	Purpose	Examples	Teaching & Training Methodology
Workforce Readiness	Foundational to individuals' entry and ongoing success in the workplace, ranging from initial job search to maintaining continuous employment	To support youth in finding and securing employment, and succeeding within the workplace	Literacy, numeracy, digital literacy, resume writing, self-presentation, time management, professionalism, etiquette, social norms	<ul style="list-style-type: none"> • Team-based • Project-based • Practical application • Experiential • Case simulation • Business exposure • Job shadowing • Mentorship • Coaching
Soft Skills	Personal attributes, social skills, and communication abilities that support interpersonal relationships and interactions with others	To support youth as they integrate and collaborate with internal and external workplace stakeholders, such as customers, co-workers, and management	Communication, critical thinking, creative thinking, collaboration, adaptability, initiative, leadership, social emotional learning, teamwork, self-confidence, empathy, growth mindset, cultural awareness	
Technical Skills	Knowledge and capabilities to perform specialized tasks	To give youth technical or domain expertise to perform job-specific tasks	Computer programming, coding, project management, financial management, mechanical functions, scientific tasks, technology-based skills, and other job-specific skills (e.g., nursing, farming, legal)	
Entrepreneurship	Knowledge and abilities that support success in creating and building a workplace opportunity or idea	To support youth in establishing their own business, supporting entry into freelance, contract work, or gig work, and/or developing as a self-starter within a work environment	Initiative, innovation, creativity, industriousness, resourcefulness, resilience, ingenuity, curiosity, optimism, risk-taking, courage, business acumen, business execution	

Lifelong Learning:

A continuous process of gaining new knowledge and skills as individuals progress through their professional and personal careers.



Assessing models to skill youth

Understanding the skills youth will need in the 4IR, is just one aspect of determining the overall model and approach the business can use to support youth. Below is a framework to guide the business community on how it can collaborate

with and invest in skills development programs and initiatives. Considering the following questions can help the business community determine gaps in programming and opportunities to invest:

Model considerations	Questions to consider
<p>Geographic target</p>	<ul style="list-style-type: none"> • What are the geographic boundaries of the identified problem and targeted youth? • Are you targeting a village, neighborhood, city, country, region of the world, etc.? • How many youths are there in your target geography? • How similar or different are these geographies, and how does that impact programming?
<p>Target beneficiaries</p>	<ul style="list-style-type: none"> • What is the target demographic that this program or initiative serves? • How many are enrolled in education, employed, and/or young people not in education, employment or training (NEET)? • Are there specific gaps in skill development and outcomes by gender, ethnicity, geography, etc.?
<p>Key program features</p>	<ul style="list-style-type: none"> • What is the model for program design, key features, and delivery method? • Is the program model demand-driven or skills driven? • What is the program duration? • How is quality monitored and assessed? • What wraparound services are included?
<p>Skills categories</p>	<ul style="list-style-type: none"> • What are the key skills taught (e.g., workforce readiness, soft skills, technical skills, entrepreneurial skills)? • Which skills are most in-demand in your targeted geography and beneficiary group?
<p>Delivery methods</p>	<ul style="list-style-type: none"> • What is the delivery method for teaching and training skills (e.g., in-person, virtual, blended, autonomous learning)? • Which teaching methods are important for your target beneficiary group and for the skills needed?
<p>Outcomes</p>	<ul style="list-style-type: none"> • What are the metrics of success and impact? • What data is collected and how are results measured? • How is this information used to improve program and strategy design?
<p>Target employment opportunities</p>	<ul style="list-style-type: none"> • What are the types of employment opportunities available to youth upon program completion? • Does the program provide direct linkages to employment? • Which industries are growing within your targeted geography, and does the program support them?

Whose job is it to prepare youth?

Whose job is it to prepare youth? And what roles can individuals, education, businesses, governments, and the nonprofit sector play in developing these skills for the future of our changing workforce? Different models in the workforce ecosystem— education-based, nonprofit, government-sponsored, youth-led and business-led models— each offer benefits, but also constraints.

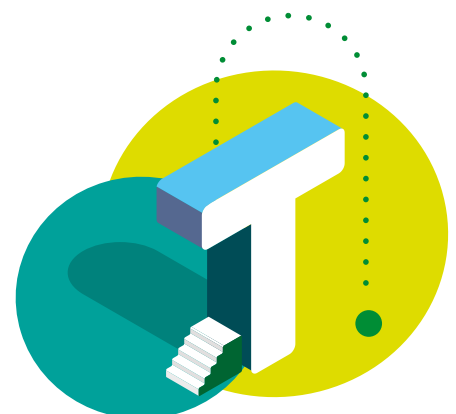
- **Education-based models** collaborate, complement, or coincide with traditional education systems, either providing in-school training, opportunities for apprenticeships, or supporting after school and out-of-school-time programming.
- **Nonprofit models** provide community-based skills development, leveraging on-the-ground institutional knowledge to create responsive programming to fulfill businesses' and youths' goals.
- **Government-sponsored models** are a bridge between education, employers, and youth, providing information platforms, outlining career pathways, and establishing standardizing qualifications frameworks to facilitate collaboration and communication.
- **Youth-led models** directly incorporate the youth voice into program planning and development, establishing feedback loops and driving interaction between youth and the business community.

The business community can partner with and/or complement the work of these stakeholders to achieve its skilling and training goals. In determining its approach and model, businesses should consider its own capabilities, time horizon, and the resources it has to leverage.

Other considerations for workforce development and skilling

The inputs to these models and frameworks are nuanced, influenced by culture, language, age, and gender norms across contexts and geographies. Emerging technologies support different methods for skilling and obtaining employment. New financing mechanisms are opening opportunities to co-invest at the global level. Geo-political issues are obliging employers and government to rethink how they approach education, certifications, skilling, and citizenship. There is increasing recognition that globalization

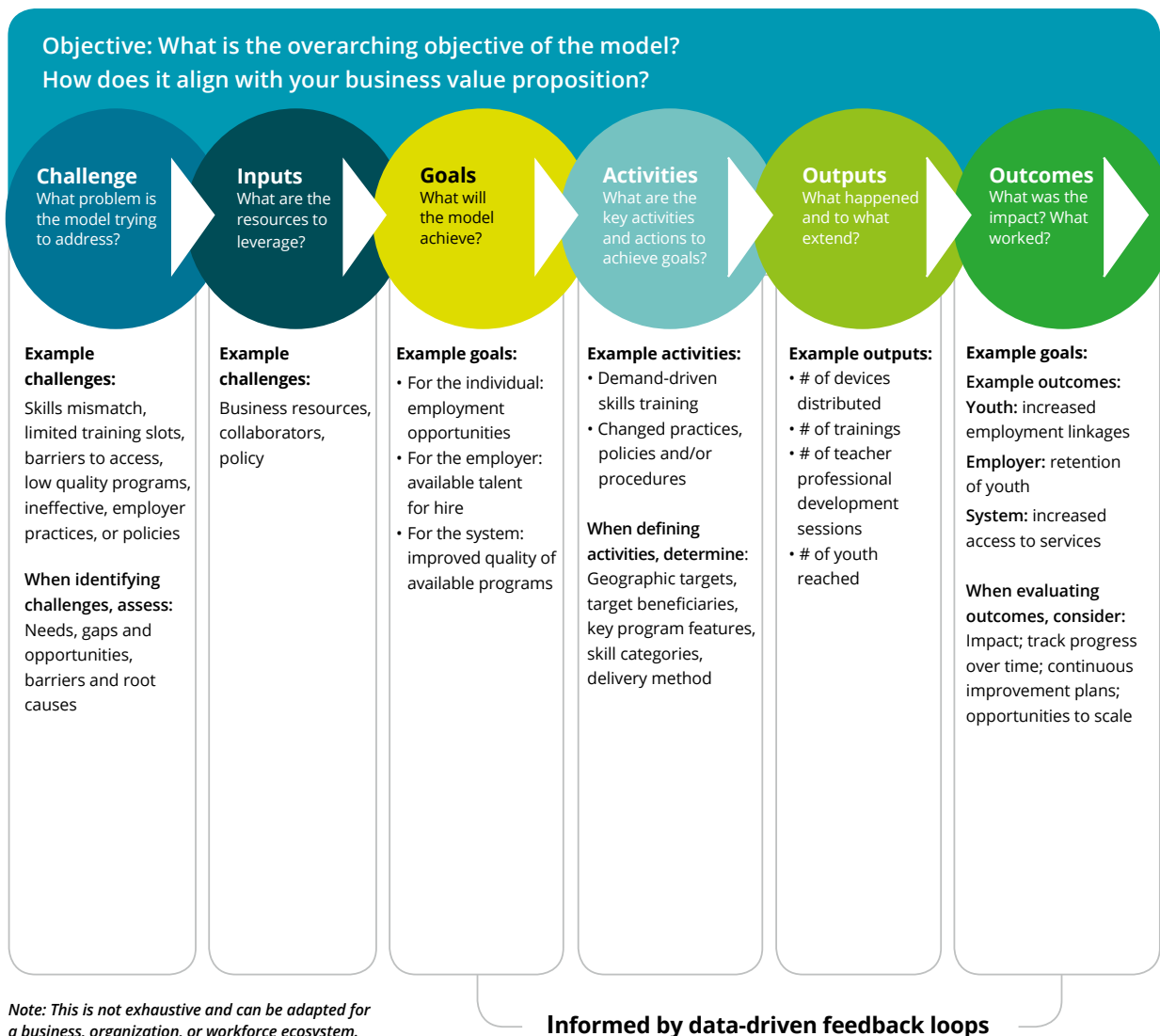
and digital accessibility are creating opportunities for physical and digital ecosystems to support youth. The delineation between the formal, informal, and gig economy is blurring, presenting opportunities for both employees and employers. And the increased focus on collaborating across the ecosystem opens opportunities to consider where and how these efforts can complement each other. All of these factors can be considered as businesses plan how to support youth in their community.



Balancing scale and impact

The answers to the model consideration questions above determine the inputs to a business model canvas, a visual roadmap to determine what to invest in or design, and eventually to determine what to scale. Using such a model can help balance a business' workforce investment with a holistic understanding of its internal goals, its target impacts, and the scalability of a program or initiative. Upon completing a business model canvas, a business should be able to answer these questions:

- 1. What is the impact?** What is the challenge you are focused on? What are the direct or indirect positive changes that will result from your efforts?
- 2. What to scale?** What activities and strategies can be expanded or replicated in new contexts or geographies to solve a problem?
- 3. How to scale?** What is the most feasible and appropriate method for scaling given a business' goals and current relationships within the larger workforce ecosystem: independently invest, design and operate, franchise, or partner?



Ultimately, the ability to scale and sustain youth skilling and employment initiatives is dependent on the business community's collaboration with the workforce development ecosystem. By working together with the interconnected parts

and actors within the ecosystem, the business community can leverage resources and expertise for greater alignment, swifter solutions, and deeper impact.

Workforce Ecosystem



Recommendations

The entire ecosystem can improve its efficiency and productivity when there is alignment across education, workforce development programs, youth and public policy. The following recommendations are provided to support the goal of improving the employment outcomes for the world's 1.8 billion youth. The recommendations are highly actionable, and offer a springboard to consider the business community's role in the larger ecosystem of youth employment. Informed by literature and stakeholder interviews, these recommendations are framed with the four challenges in mind.

1. Align stakeholders' objectives and approaches:

To achieve scale, business should work with the broader ecosystem to align goals and outcomes for impact.

- a. **Bring together diverse perspectives to develop a shared agenda to align the vision, goals, and strategies for youth skill and workforce development.** This includes:
 - i. **Identify the underlying drivers of the skills mismatch, which often vary by industry, and design and implement strategies to remove youth employment barriers, and improve upstream and downstream practices.** This could include a landscape analysis of your current employment needs compared to available employee skills training programs offered through local workforce programs or traditional education systems.

ii. Collaborate with other businesses to align investments around shared goals.

Find opportunities to co-invest in local workforce development programs, and to collectively communicate regarding best practices for effective strategies and scaling models, skills needs, available talent from training programs, and opportunities for cooperation.

iii. Develop a common language, prioritizing policy and investment decisions, and assessing resource allocation.

When working with other ecosystem actors, establish a shared language from the outset to avoid confusion and ensure alignment.

iv. Commit to—and implement—policies, programs, and practices to drive faster, measurable, and more sustainable progress for youth.

This could include developing metrics of success for programs, outlining definitions of "success," and establishing benchmarks from day one.

v. Develop metrics to demonstrate acquisition of soft skills at different stages of youth development

Align the vocabulary and key indicators of soft-skill acquisition to demonstrate competency and proficiency in education, and in the workplace.

b. Empower workforce development programs to be your business ambassadors, and connection to the community.

Establish your value proposition and communicate youth company culture, talent needs, skills definitions, and hiring and advancement pathways for program participants.

i. Engage with education systems and afterschool programs to encourage integration of the four skills (workforce readiness, soft skills, technical, and entrepreneurship) in program design.

This could mean investing directly in local programs, or providing opportunities for job shadowing and mentoring.

ii. Provide technical expertise and communicate employment needs to local career technical education (CTE)/technical and vocational education and training (TVET)/training programs.

Supporting these types of local programs through financial resources and/or technical expertise can help strengthen alternative education programs while building a talent base with the skills needed for industry.

iii. Consider opportunities to collaborate with local workforce programs to establish demand-driven linkages.

With an understanding of your company's criteria for collaborating with—and investing in—programs, speak with workforce programs to better understand how to develop demand-driven approaches, providing direct guidance for training and links to employment.

c. Invest in technological infrastructure to promote digital literacy, accompanied by instructor training and upskilling in associated skills.

This can include directly supporting the purchase of computers and digital devices accompanied by support for Internet accessibility and instructor education.

i. Promote and share open-source online courses tailored to the business needs of 4IR.

Create accessible, technology-based learning opportunities that can be used by workforce training programs. This could provide nonprofits with the tools to train youth to enter the private sector, as well as resources for youth pursuing self-employment.

d. Provide and advocate for flexible funding to workforce programs to support operating costs, and provide leverage from other funders.

Operating costs are not often covered by government or institutional grants that support program costs. Therefore, it is possible to gain leverage by focusing support on operating requirements, such as staff, technology, leadership development and training, rather than on just program costs that come through more traditional support from other funders.

e. Partner with organizations that work within the informal sector.

Leverage local partners' knowledge and outreach to the informal sector, finding opportunities to provide resources and services, as appropriate. This can include resources to support informal sector apprenticeships.

2. Engage in public policy:

Strategically engage in public policy through, dialogue, advocacy, collaboration, and influence.

a. Support public policy efforts that have downstream, long-term goals like the development of cross-border qualification frameworks.

This could include providing public support for such policies, collaborating with policymakers by sharing information and data, or partnering with policymakers to build and design complementary policies, and provide private sector credibility and buy-in.

b. Collaborate with like-minded employers to work directly with government on initiatives that can help prepare youth—especially those from low-income, high-risk populations.

This could include joining organizations like the Global Business Coalition for Education that are focused on such initiatives, and that can collectively leverage the voice of the business community.

c. Share employment data and skills needs with governments to inform programs, improve regulations, and align rules with employer realities. This could include sharing information around future talent pipeline needs, or providing insight into skills needs and requirements for credentialing to build hiring frameworks and employment and promotional pathways.

d. Participate in globally-focused discussions on the repercussions of 4IR for developing countries. This could include active participation in policy and research that questions how automation and digitalization will impact developing countries' economies, with attention to establishing automation-resistant sectors.

3. Develop promising talent strategies:

Analyze current talent strategies—particularly those focused on youth or under-represented populations—and implement best practices to promote inclusivity and innovation, and drive economic return through differentiation.

Attract

a. Articulate the skills needed using language that speaks to your target audiences when writing job descriptions. This means removing vague wording, incorporating specific skill requirements, and using inclusive language that avoids implicit bias and be understood by diverse applicants. Job descriptions should avoid speaking to a homogenous audience given the great diversity of youth talent.

b. Look for talent in sectors that promote entrepreneurship and self-employment, such as the informal and gig economies, to attract new talent pipelines with transferable skills. This means broadening where and how employment opportunities attract youths demonstrating entrepreneurial skills.

Recruit

c. Broaden the base of talent sourcing to include community-based workforce programs that support the skills you need, targeting a diverse pool of community colleges, universities and vocational programs, and advertising on a range of platforms that reach diverse talent. Perform due diligence to assess where, and how, broadened target pipelines access employment information, and then leverage these talent platforms to recruit.

d. Assess current recruiting strategies to validate that the process and practices do not exclude or bias against youth from nontraditional backgrounds, regardless of race, ethnicity, gender, disability, etc. This can mean widening the criteria for hiring to include an evaluation beyond a potential applicant's education credentials, instead hiring based

on their potential. For example, companies can use blind hiring or withhold university credentialing from interviewers to limit the potential of bias.

e. Evaluate current language and questions used throughout the hiring process, including those used on the job application and during job interviews. This includes continuous competency training for hiring managers, including unconscious bias training and youth employee interviews to gauge diversity and inclusion practices. Consider broadening how "work experience" is framed, and allow room for youth to discuss their experiences outside of the formal employment setting (such as through community service, extracurriculars, or informal work).

f. Support human resources departments to track and measure data about applicants to better inform targeted outreach and recruitment processes. This could include tracking their offer rate, doing onboarding interviews, maintaining ongoing touchpoints to assess progress, and performing exit interviews to better hone practices.

Onboard

g. Train onboarding managers to bridge youth entrance into the workforce through inclusive language and support. In doing so, help promote productivity and retention.

h. Pair youth with peer mentors—employees close in level—who can provide insights and advice. Mentorship in this manner can help increase retention, improve performance, and be rewarding for both the mentors and the mentees.

Develop and retain

i. Create and market a company culture that attracts target youth populations by supporting youth voices, and ownership of career pathways. In addition, support youth retention and advancement through promotion of physical and mental health, paid family leave, and well-being.

i. Pay attention to structures and culture that encourage women and girls' success. This can include caregiving policies, flexible working hours, the physical work environment, management structures, and the overall culture of inclusivity.

j. Encourage youth to hone and strengthen their entrepreneurial skills. Support and sponsor professional development opportunities, and give youth autonomy to build their own brand and expertise.

k. Promote youth as your brand ambassadors. Integrate youth in your hiring, recruiting, and selection process. They can speak to their experience, and your brand will connect well at a peer level.

l. Develop retention strategies to support youth skill development and training. Promote and build a culture of learning that recognizes and rewards the need for upskilling and lifelong learning through supported learning opportunities and mentors.

m. Track and monitor nontraditional hires. Leverage your employee management system to ensure non-traditional hires are receiving the appropriate levels of support, and to evaluate whether your investment in youth talent is providing positive returns.

n. Create and encourage education and training platforms that promote the four skills categories (work readiness, soft skills, technical skills, and entrepreneurship), and lifelong learning.

4. Invest strategically in workforce training approaches:

Evaluate, invest, and promote workforce training programs that align with your corporate social responsibility goals, talent practices, skill needs, and corporate culture.

a. Evaluate investment in workforce training programs in terms of your corporate social responsibility goals and enterprise talent strategies. Determine your investment strategy based on future requirements, available resources, and capacity.

b. As a core business investment, evaluate opportunities while considering three inputs:

- *Capability:* Consider your competitive advantage and align your strategic objectives to determine your role in the overall ecosystem. This will help determine whether to build new programming or support existing programming.
- *Time horizon:* Given the large amount of upfront capital potentially required without a guaranteed return, consider your short- and long-term goals for investing in workforce-training programs. Use these goals to determine your investment strategy.
- *Model for scale:* Consider your long-term vision for scale, and which model is appropriate should you choose to scale programming.

c. Publicize a standardized disclosure mechanism of workforce development investments in collaboration with other business community leaders.

Committing now to youths' success

The models and recommendations outlined in this report represent opportunities for impact. Transforming an entire youth workforce development ecosystem is critical and possible. As the workforce, workplace, and world evolve, today's efforts will provide future returns. The business community is well-positioned to seize this opportunity and prepare the youth workforce for 4IR.

We have the opportunity now—at a moment of inflection—to address the possibility of growing “unevenness” in access and opportunity. These challenges and recommendations are aimed at not only helping you improve your company's social responsibility footprint and talent strategies, but potentially also your bottom line, widening your talent pool and creating a company culture that promotes youth prepared for 4IR.

As youth become your future employees, consumers, and competitors, we encourage you to respond to these bold challenges and make renewed commitments to support youth as a business community and ecosystem of collaborators.

The time to prepare youth for the Fourth Industrial Revolution is now.



The Global Business Coalition for Education would like to thank the Youth Skills and Innovation Commission for their support:

Commission Co-Chairs:

Sarah Brown, Executive Chair, Global Business Coalition for Education; President, Theirworld
 Rosalind Hudnell, vice president Corporate Affairs, Intel; President, Intel Foundation (retired)

Commissioners:

Asheesh Advani, president and CEO, JA Worldwide
 H.E. Sarah Anyang Agbor, African Union Commissioner for Human Resources
 Adeyemi Babington-Ashaye, President, United People Global
 José-Manuel Barroso, Non-executive Chairman of Goldman Sachs International (GSI);
 Former President, European Commission
 Irina Bokova, Director-General, UNESCO
 Fred Dedrick, President and CEO, National Workforce Solutions
 Daniella Foster, Senior Director of CSR, Hilton
 Henrietta Fore, Executive Director, UNICEF
 Kristalina Georgieva, CEO, World Bank
 Michael Hasting, International Head of Corporate Citizenship, KPMG International
 Nate Hurst, Chief Sustainability and Social Impact Officer, HP
 Tracy Lovatt, CEO, Batten and Co
 Tim Nourse, President, Making Cents International
 Janet M. Riccio, Dean, Omnicom University, Executive Vice President, Omnicom Group
 Josette Sheeran, President and CEO, Asia Society
 Michael Silberman, Global Director, Mobilization Lab
 Jayathma Wickramanayake, United Nations Secretary-General's Envoy on Youth

For further information on the report, please contact:

Katie Armstrong, Deloitte Global: katarmstrong@deloitte.co.uk

Maggie Koziol, Deloitte US: mkoziol@deloitte.com

The Global Business Coalition for Education: info@gbc-education.org

Deloitte.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee (DTTL), its network of member firms and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as “Deloitte Global”) does not provide services to clients. Please see www.deloitte.com/about for a more detailed description of DTTL and its member firms.

Deloitte provides audit, consulting, financial advisory, risk management, tax and related services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries and territories, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte’s more than 245 000 professionals are committed to making an impact that matters.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms or their related entities (collectively, the “Deloitte Network”) is, by means of this communication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. No entity in the Deloitte network shall be responsible for any loss whatsoever sustained by any person who relies on this communication.

© 2018. For information, contact Deloitte Touche Tohmatsu Limited

Designed and produced by Creative Services at Deloitte, Johannesburg. (814588/NM)