

4IR QUARTER 3 REPORT

CSP RESEARCH UNIT



nyda

NATIONAL YOUTH DEVELOPMENT AGENCY
OUR YOUTH. OUR FUTURE.



Foreword

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Fourth Industrial Revolution (4IR) IS triggered by changes in technology, information and innovation at a global level. These elements will drive changes in lifestyle management and inform societal behavior. The Information Technology Industry of the future will generate new consumer behavior in their interaction with Internet technology and Business Operating Technology. Ultimately impacting on the future of workforce, business or organisational perspective and smart technologies.

According to Bill Gates (Founder of Microsoft) the Fourth Industrial Revolution will be a global intervention where never in history has innovation offered a promise of so much, so many in a short of time. It will consist of the following:

- Emerging Catalytic Technologies
- Machine Learning
- Speed of Change
- Global Scale

The challenges that come with these changes is that is continued industrialization, where technology will determine the shape of the economy and its future. According to Prof. C Adendoff (Senior Futurist) "The Fourth Industrial Revolution present a turning point for the human development, as the rapid pace of Technological change tests, social cohesion and demands bold policy responses in order to better foster, innovation, develop social economics, policy

and prudently increase productivity .

The opportunities presented by Fourth Industrial Revolution is the introduction of new technologies, possibility of increased wage of technologies influencing the very way we live, work and communicate with each other. The new human development skills introduced by SMART Technology will determine how we design and develop youth development interventions of the future.

The NYDA has the responsibility to lead in advancing youth development in the country. The implication is that innovative ways of engaging young people meaningfully on issues related to Skills Development, Entrepreneurship and Enterprise Development will become a priority. Through Research, the NYDA will have ability to understand degree of complexity of SMART technologies and responsive strategies required for youth

The breakthrough Bill Gates is waiting for, <https://www.weforum.org/agenda/2017/03/this-is-the-technological-breakthrough-bill-gates-wants-to-see/>

Rhodes University, Policy Implications of the 4th Industrial Revolution for the Cultural and Creative Economy, measuring and valuing SA cultural and creative economy

Abbreviation And Meaning

Ai	Artificial Intelligence
App	Application
4ir	The Fourth Industrial Revolution
Ict	Information And Communication Technology
Iot	Internet Of Thing
Ndp 2030	National Development Plan 2030
Nyda	The National Youth Development Agency
Nyda	National Youth Development Agency
smmes	Small, Medium And Micro-sized Enterprises
Seda	Small Enterprise Development Agency
Un	United Nations
Vr	Virtual Reality
Wef	World Economic Forum

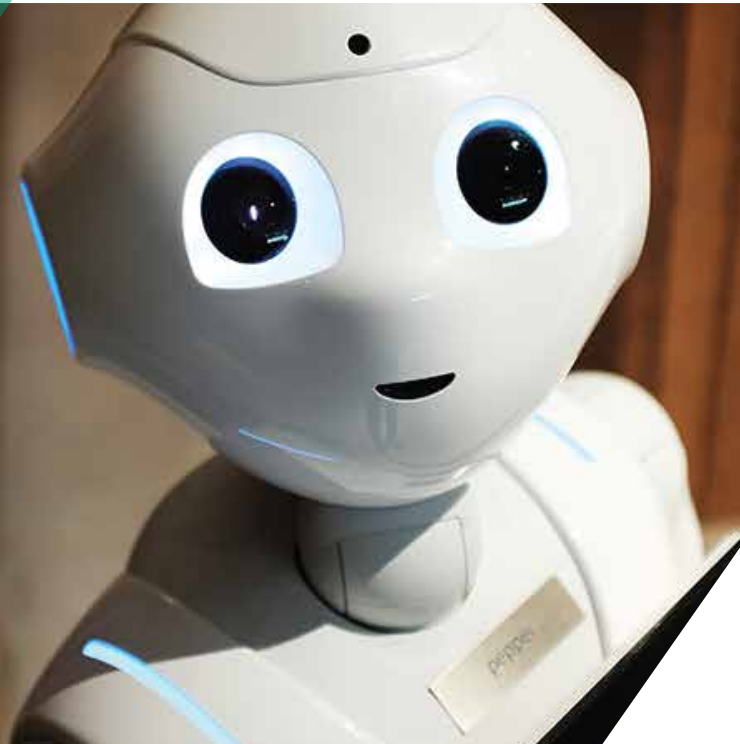
Glossary of Terms

Machine Learning	Machine learning is the scientific study of algorithms and statistical models that computer systems use to perform a specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of artificial intelligence.
SMART Technology	"Self-Monitoring Analysis And Reporting Technology." It is used to protect and prevent errors in hard drives. The SMART technology basically monitors and analyzes hard drives (hence the name), then checks the health of your hard drive and lets you know if there are any problems.
Digital Technology	Electronic tools, systems, devices and resources that generate, store or process data. Well known examples include social media, online games, multimedia and mobile phones. Digital learning is any type of learning that uses technology
Block Chain	Decentralized, distributed, and oftentimes public, digital ledger that is used to record transactions across many computers so that any involved record cannot be altered retroactively, without the alteration of all subsequent blocks
Entrepreneurship	The process of designing, launching and running a new business, which is often initially a small business. ... Entrepreneurship has been described as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit
Enterprise Development	Business to black business transaction, where the aim is to provide contributions to assist in the operating, financial and development towards business sustainability
Innovation	Involves deliberate application of information, imagination and initiative in deriving greater or different values from resources, and includes all processes by which new ideas are generated and converted into useful products
Communities of Practice	Is a group of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly. This definition reflects the fundamentally social nature of human learning
Social Media	refers to websites and applications that are designed to allow people to share content quickly, efficiently, and in real-time. Many people define social media as apps on their smartphone or tablet, but the truth is, this communication tool started with computers.
Cognitive Flexibility	Cognitive flexibility has been described as the mental ability to switch between thinking about two different concepts, and to think about multiple concepts simultaneously. Cognitive flexibility is usually described as one of the executive functions



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1. Purpose

For the NYDA to continue products and services efficiently and effectively it must optimize its model of Business Operations Technology. The key questions to ask are as follows:

- 1) Should the NYDA programmes go Digital?
- 2) Should the Agency reskill its employees?
- 3) Should NYDA find new innovative meaningful ways of engaging young people?

This report offers advice on the challenges, obligations and opportunities programme and opportunities facing business leaders. It also outlines recommendations that, taken together as coordinated action between industry, governments, young people and other stakeholders create a strong framework for advancing the cause. But it's more than a collection of ideas. This report represents a bold vision to convene business around a movement to prepare youth for the Fourth Industrial Revolution. It's a call to action—to respond to critical challenges by committing to support and develop the workforce of tomorrow.

2. Introduction

The Fourth Industrial Revolution is bringing about the development of new techniques and business models

which will fundamentally transform production process, government decisions, industry and the society at large, as they will be confronted by a new set of challenges and uncertainties.

This shifts the attention from physical technologies towards adaptive social technologies, an area where trust, policy networks, learning by doing, and collaboration between different social actors are critical success factors. All these mirages of challenges are underpinned by youth development challenges which seek to position itself at the centre of transformation agenda. Therefore, the approach to fourth revolution should be underpinned by youth development for it to succeed in South Africa.

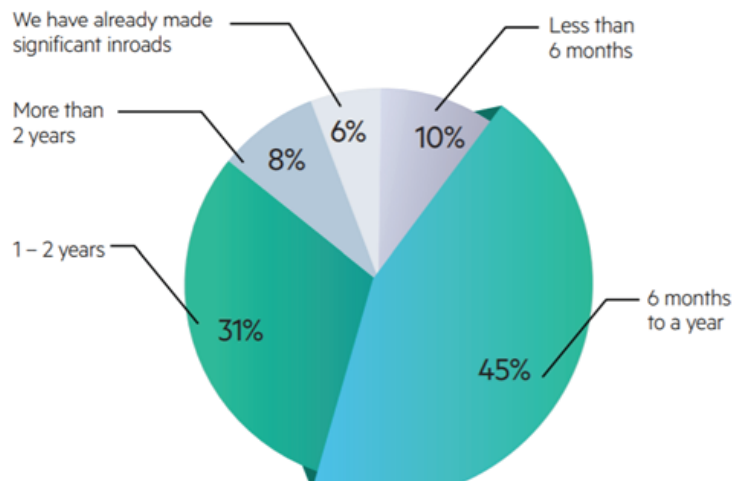
The three (3) questions asked by the Agency introduce key challenges that requires immediate attention. These challenges need to be explored in order to understand that needs to be automated, how to skill for innovate products and services and ensuring continued connection to young people for meaningful engagement. This will create a transformative environment that connect people, process, data and things.

“59% say they are worried they may be too late with their digital transformation efforts and will fall behind their competitors”

This is well in line with the results of our survey, where 86% of respondents say they have two years to make inroads with digital transformation (55% say a year or less) before they begin to suffer from financial or competitive threats. Placing even more urgency on the situation, 59% of respondents are worried they may be too late already.

Below are some of the responses and feedback from the survey conducted by global organisation leaders. Where does NYDA see itself>>>>?

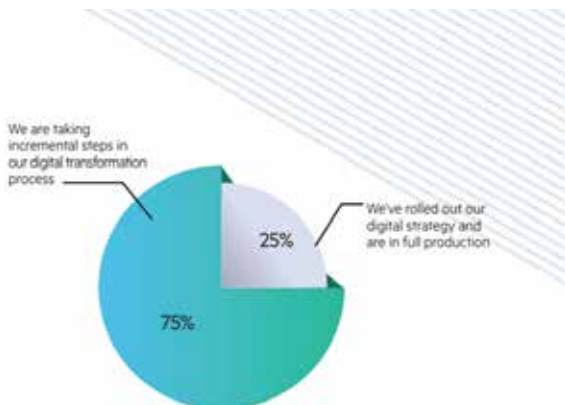
How long do you think your organization has to make significant inroads with digital transformation before the business begins to suffer financially or from competitive threats (market/mind share)?



IDC Future Scape: Worldwide IT Industry Predictions — Leading Digital Transformation to Scale

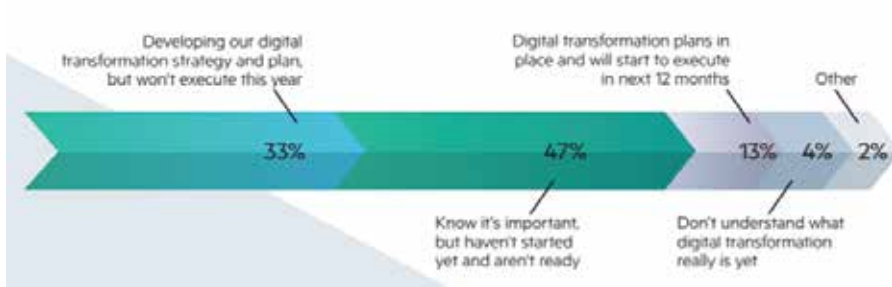
When asked about their digital transformation strategy, 76% of respondents have a defined strategy. Most of these decision makers are still taking incremental steps (75%), rather than having a digital strategy fully

rolled out or in production. Of those that don't yet have a defined strategy (24%), many know it is important, but haven't made time to start evaluating a process (49%).



Most of these decision makers are still taking incremental steps (75%), rather than having a digital strategy fully

J. Land, *How Digital Transformation is Driving Customer Experience*, <https://www.superoffice.com/blog/digital-transformation/>



Of those that don't yet have a defined strategy (24%), many know it is important, but haven't made time to start evaluating a process

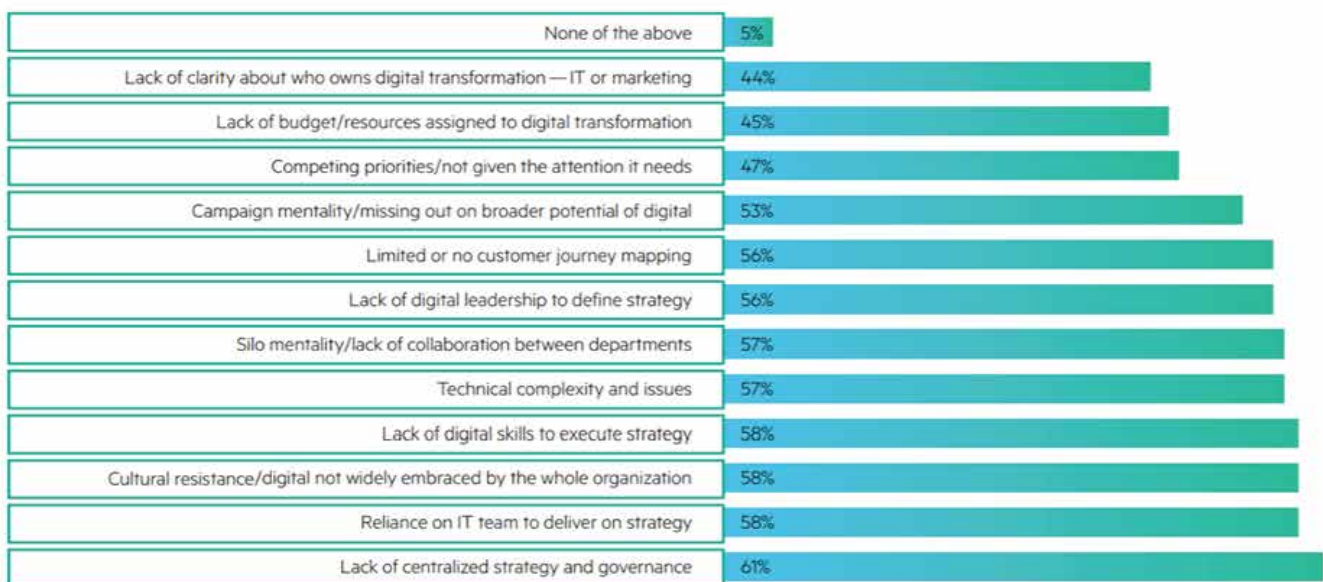
New digitally conscious customers use mobile devices, applications (apps), machine learning, automation and much more to get what they want almost exactly at the moment they need it as highlighted by Jennifer Lund. These digital technologies have introduced a shift in customer wants resulting to an emergence of a modern buyer who is constantly connected and aware of what he/ she can do with technology.

Customers of today expect targeted messages that can be advanced through a data driven marketing strategy. Using digital channels to implement search engine marketing and email marketing and email

marketing strategies. Digital is not about being reactive, its about being proactive in the way you respond to your customers. Key measures of success should be social media, review sites, forums and communities of best practice that enable a Youth Centre Services ecosystem.

Only about 25% of businesses are very confident in their ability to execute, whether integrating all sources into a comprehensive digital business strategy, managing the entire application lifecycle, mapping the customer journey or the ability to pull initiatives together into a cohesive digital transformation strategy.

Below is a graph indicating barriers to delivering compelling customer experiences

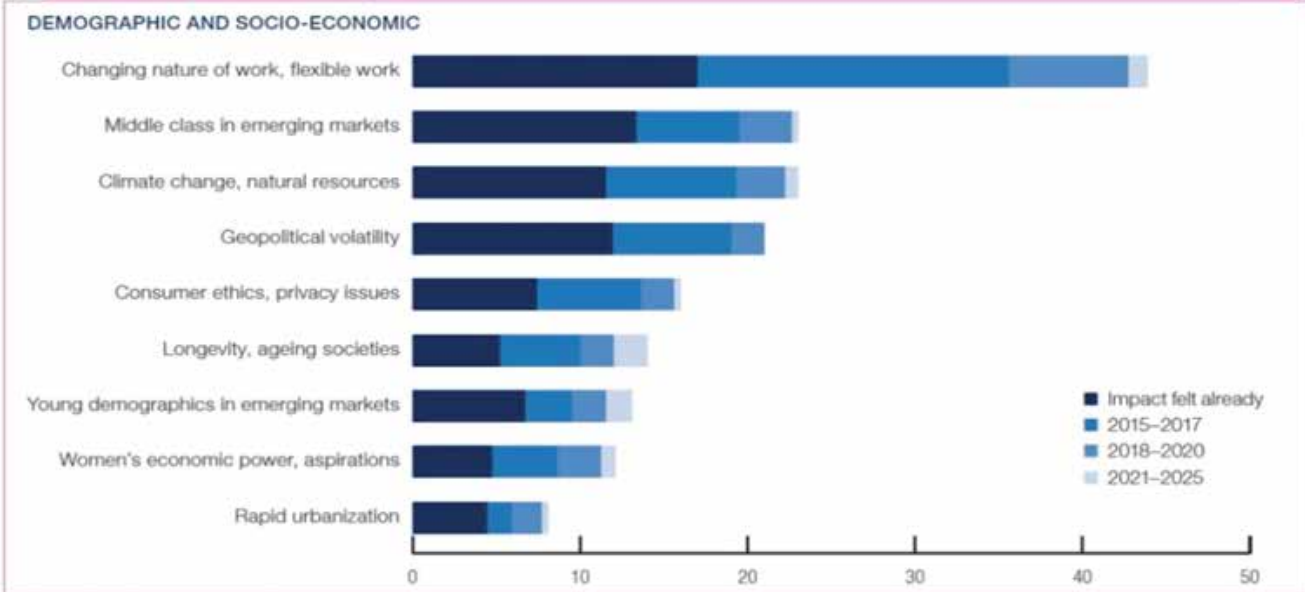


2.2. Should NYDA reskills its employees?

The next generation of workers will be prompted to display the necessary skills that will be significant in nurturing talent. According to a report by Rebecca Mosehle (Liquid Telecoms, African Digital Skills), the

needs to be development of soft skills to complement the digital ones as being particularly important. Much of these need for soft skills is driven by the requirements to collaborate is a 4IR environment by the process of change, time to impact employee skills.

Drivers of change, time to impact on employee skills (Share of respondents, %)



Source: Future of Jobs Survey, World Economic Forum

She emphasises that a key driver will be nature of work, with employees requiring greater flexibility, in the location and degree of flexibility that job offers. Linked to this will be an increasing need for cross functions skills, where coordination, negotiation and emotional intelligence will play a bigger role in the workplace.

This uneven distribution of population-driven talent and employment opportunities represents a potential global mismatch in supply and demand. This potential skills mismatch could result in an overall environment where high-skill workers fulfil high-paying roles, and low-skill workers fulfil lower-paying, task-based roles that could be replaced through automation. This dynamic could create a “hollowing of the middle,”

further exacerbating fiscal and social global inequalities, social unrest and migration, and causing intergenerational, systemic-level repercussions.

Not addressing the mismatch between supply and demand could leave the business community facing an increasing shortage of skilled labour, and the global community seeing further growth in informal sector participation. Youth are increasingly looking to business to provide the tools needed to address this new world of work as jobs change, evolve, and grow beyond 2020, the World Economic Forum (WEF) Survey found that cognitive abilities, systems knowledge, skills knowledge and complex problem solving ranked the highest as per picture depicted below.



Source: Future of Jobs Survey, World Economic Forum



Youth Voices on Skills

The skills important for the future of work include work readiness skills, soft skills, technical skills, and entrepreneurial skills.

- Improvement is needed in the approach to youth skill development, such as making learning and training interactive, multicultural, engaging, constructive, and practical.
 - Barriers to skill development and employment include lack of access to resources, lack of knowledge about careers and skills needed, lack of opportunities, tools and training, adult beliefs in youths' abilities (mindsets), and systemic issues.
 - There is a misalignment in the skills that youth acquire and the demand for skills needed in the workforce.
 - The responsibility to prepare youth for future jobs rests in part in the hands of government, non-profits, the business community, schools, and civic society.
 - Workforce development efforts should consider country specifics, incorporate up-to-date skill training methodologies, engage youth to solve problems, and see 4IR as an opportunity.
- In terms of recommendations, youth suggest that the business community:

- Clearly communicate the skills it needs
- Provide resources, opportunities, and flexible funds to support youth skill development
- Engage with education and workforce development programs to advance their efforts
- Create and support inclusive hiring and retention practices
- Engage youth in workforce development initiatives

2.3. How will NYDA meaningfully innovate to engage young people?

Youth involvement can benefit organizations and their programs as well as the youth themselves. Programs that are developed in partnership with youth are more likely to be effective at engaging the population and, therefore, to have a greater impact. Involving youth as partners in making decisions that affect them increases the likelihood that the decisions will be accepted, adopted, and become part of their everyday lives.

T, Davies Exploring how digital technology can support young people to engage socially and economically in their communities, <https://www.timdavies.org.uk/2012/04/02/digital-technologies-supporting-young-people-to-engage-socially-and-economically-in-their-communities/>



In addition, empowering youth to identify and respond to community needs helps them become empathetic, reflective individuals, setting them on a course to potentially continue this important work in their future. Meaningful youth engagement views youth as equal partners with adults in the decision-making process. Programs and activities are developed with youth, rather than for youth.

Through Innovation

The race is on to re-engage young people in building an inclusive, healthier, more equal and economically viable society. According to Tim Davies (who advocates for Youth Participation in digital technologies) says, changing times need fresh thinking and new solutions. It is essential that we find new, more effective approaches to addressing these persistent social and economic challenges.

Digital technology offers all of us the opportunity to engage young people in new, more meaningful and relevant ways and enable their participation in building a more resilient society. Many different strategies are needed to support young people. But digital innovation can be about more than tools and platforms: it can be about seeing how digital communication impacts upon the methods of organizing and the sorts of activities that make sense in contemporary communities. Digital innovations to support youth

engagement in employment, enterprise and community action might not just involve changing the way services are delivered to young people.

Civic Engagements

According to LSE Online research report, it emphasises that digital civic participation allows young people, allow young people to be the vanguard in their space. Leveraging digital cultures offer new approaches for young people to challenge traditional understanding of civic participation and value a different form of engagement.

The increase in internet - based communities and online platforms provide young people with opportunities to engage in civic and political dialogues. Online dialogue can happen anytime and anywhere. It allows young people to share a point of view and be exposed to other perspectives and push ideas for change.



3. Recommendation

3.1. Creating Digital NYDA programs

Most countries are focusing on the alignment with or adaptation of national development plans (NDPs) to the 2030 Agenda, and continental and sub-regional level development agendas. From across Africa show the innovative ways in which technologies are used to harness the fourth industrial revolution in ways that include the youth and women and contribute to generating much-needed employment and income generation opportunities.

These innovations have helped redefine the work week, created a new economy of gig-based independent contractors who are reshaping when and where work is done, and blurred the traditional definitions of formal and informal employment. Creativity will be another sought after skill where employees can use technologies or fuse technologies to apply them creatively to areas where they have not been applied before.

Initiatives are required to promote the uptake and usage of digital and other technologies aligned to the fourth industrial revolution across all sectors of the economy. Moreover, to have a smooth transition to fourth industrial revolution the government should have catalytic initiatives to promote Small Micro and Medium Enterprises (SMME's) which are aligned to Industry 4.0.

Digital Solutions

- Youth engage platforms - On digital transformations affecting lives of young people through SEDA programmes
- Use social media platforms for advocacy and Lobbying -
- make young people to be actively engaged and empowered on the ability to participate in the dialogue benefits the NYDA programmes
- Using WhatsApp for communities of Practice to share information on NYDA programmes
- ICT at NYDA to conduct research on certain platforms and technologies that may be free and easily accessible
- Understand through research what social media platforms respond to mostly on media platforms on NYDA content either visual element or intense content and utilise space to introduce NYDA programmes.
- NYDA to run campaigns foster and provide lessons on optimising use of social media and ICT platforms technologies especially for rural youth development initiatives

3.2. Reskilling NYDA employees

Now is the time for the business community to reposition as an influential driving force for change and create more and inclusive pipelines for the most more inclusive pipelines for the most-susceptible youth globally. It's time to invest in new ideas and approaches to skilling youth for the future of work not in a vacuum, but in a coordinated, committed fashion. Improving the potential employment outcomes for global youth demands that business, governments and other key players cooperate to align educational initiatives, workforce-development programs and public policy.

The advent of the Fourth Industrial Revolution (4IR) also demands that the youth be equipped with specific skills sets because on average, a third of the skills sets required to perform today's jobs will be wholly new by 2020. Concretely, the 4IR has the potential to create business and job opportunities for youth that never existed before, especially if they receive the right training, for example, on robots and their numerous sets of applications. It also opens avenues for entrepreneurship, since youth entrepreneurs are at the forefront of technological innovation.

Some of the soft skills required will be based on people management, effective interaction and communication at workplace and the ability to work as Organizations have already started to harvest data from all possible sources. In future it will be important for employees to make meaningful information from the harvested data. As we go into the future, we should have enough cognitive flexibility to learn and pick up new knowledge on the go as and when required. The future is going to be a lifelong learning experience (M. Curtin, 2017).

3.3. Innovation for meaningful engagement

- Young people are receptive to change and are in the forefront of digital world. The methods of youth work must match new challenges of Youth Work should be SMART
- Young people must continuously seek new connections and means for coping with youth challenges that they face.
- Increase opportunities to encourage creativity, self-initiative, co - operation, reduce the risk of youth exclusion, improve readiness for the job market and support active participation in community's decision making through online platforms and digitalized NYDA programmes.
- Enrich opportunities for better information access to youth work participation through digital spaces from NYDA platforms.

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