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Digitalize, adapt and innovate: Challenges and opportunities for trade unions amidst the COVID-19 pandemic and the recovery period

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Introduction

The adoption of digital technologies in the workplace, the economy and social spheres took centre space following the outbreak of COVID-19 and the associated changes in the world of work characterized by teleworking, social distancing and COVID-19 health protocols. New ways of doing business were necessary to control the spread and impact of COVID-19. This situation was also particularly applicable to workers and their organizations: the internet and systems that were accessible online became pivotal to the daily functions of trade unions.

The new forms of working did not start with COVID-19. Terminologies such as "telecommuting" or "teleworking" were coined in the early 1970s by Jack Nilles, popularly known within technology circles as the father of telecommuting, to respectively mean using technology in place of commuting to work and using technology in place of travel (Nilles 1975). The two terms are gradually being replaced by similar-meaning terms such as "remote work", "distributed work", "work shifting", "smart working", "mobile working", "work-from-home", and "work-away-from-office".

A recent survey established that 56 per cent of employees had jobs that could partly be done remotely, while workers' desks were repeatedly reported to be empty between 50 and 60 per cent of the time (Global Workplace Analytics 2020). However, there is less literature available on how workers' organizations harness digital technologies in their daily operations of recruitment, organizing, research, collective bargaining and social dialogue, education and training, mobilization of workers, advocacy and engagement, given that before COVID-19 most activities were predominantly face-to-face.

Moreover, digitalization is challenging trade unions to rethink how they do business, how they can adapt, and also whether "digital or online trade unionism" should be the new normal. The increased access to social media both in and out of the workplace means that employers and trade unions can no longer afford to ignore this growing phenomenon or treat it as a side issue (ACAS 2011). More important is how to maintain the culture of incremental changes in the form of making improvements or additions to trade union processes while at the same time maintaining the organizations' core principles and values of promoting and defending workers' rights.

It is in this context that this article discusses digitalization from a worker organization and core trade union perspective. The article also explores the emerging challenges: complexities that intersect with digital technology deficits at national level and growing informalization, gaps and opportunities for workers' organizations as they embrace use of digital technologies at various levels of their operations. It makes recommendations on how to leverage digital technologies to mobilize workers as well as fight for, protect and promote their needs and interests. Overall, the article argues that whilst various challenges exist (both external and internal), the adoption of digital technologies by trade unions still provides huge opportunities and benefits that unions can leverage which might not have otherwise been realized through physical meetings, conferences and interactions.

Conceptual framework of digitalization and trade union operations

According to the ILO's recent report *World Employment and Social Outlook 2021* (ILO 2021) there has been a five-fold increase in the last ten years of digital labour platforms transforming the world of work (the report defines digital platforms as online entities providing digital services and products). According to the report, digital labour platforms are providing new work opportunities, including for women, persons with disabilities, young people and those marginalized in traditional labour markets. This growth has underlined the need for international policy dialogue and regulatory cooperation in order to provide decent work opportunities and foster the growth of sustainable businesses more consistently.

The report's findings are based on surveys and interviews with some 12,000 workers and representatives of 85 businesses around the world in multiple sectors. It focuses on two main types of digital labour platform: online web-based platforms, where tasks are performed online and remotely by workers, and location-based platforms, where tasks are performed at a specified physical location by individuals, such as taxi drivers and delivery workers.

The challenges for platform workers relate to working conditions, the regularity of work and income, and the lack of access to social protection, freedom of association and collective bargaining rights. Working hours can often be long and unpredictable. Half of online platform workers earn less than US$2 per hour. In addition, some platforms have significant gender pay gaps. The COVID-19 pandemic has further exposed many of these issues.

The new opportunities created by digital labour platforms are further blurring the previously clear distinction between employees and the self-employed. Working conditions are largely regulated by the platforms' terms of service agreements, which are often unilaterally determined. Algorithms are increasingly replacing humans in allocating and evaluating work, and administering and monitoring workers.

Digitalization is characterized by rapid technological and digital advancement through increased use of mobile communication and interconnectivity (Internet of Things – IoT), big data, artificial intelligence, robotics, autonomous vehicles, 3D printing, nano and biotechnology, and quantum computing, among others (ILO 2021). Whilst the subject of digital technologies is broad, this article explores three dimensions of digital technologies that intersect with the role of workers' organizations (figure 1).

Figure 1. Digital technologies intersecting with the role of trade unions

Hard devices	Networking softwares	Informational softwares
Smart phones	Social media (WhatsApp, Facebook, Twitter, Instagram, etc)	Interactive websites
Internet-connected gadgets (computers, laptops, tablets)	Web-based / virtual platforms for meetings, training, conferences, etc	e-publications (e.g. e-books, e-learning packages)
	Streaming technology	

The Global Commission on the Future of Work (ILO 2019a) recognized the importance of harnessing and managing technology for decent work. It called for workers and managers to negotiate the design of work by adopting a “human-in-command” approach to artificial intelligence that ensures that the final decisions affecting work are taken by human beings. The report also recommended the establishment of an international governance system for digital labour platforms to require platforms to respect certain minimum rights and protections. To that effect, the Global Commission called for a “Universal Labour Guarantee” for all workers including fundamental workers’ rights, an “adequate living wage”, “limits on hours of work” and “ensuring safe and healthy workplaces”.

For its part, the ILO Centenary Declaration for the Future of Work (ILO 2019b) also reaffirmed the continued relevance of the employment relationship as a means of providing labour protection to workers. In a way, the Declaration recognized that new ways must be found to afford adequate protection to all workers, whether they are in full-time employment, executing micro-tasks online, engaged in home-based production for global supply chains or working on a temporary contract.

These transformations in the world of work can result in situations of employment misclassification that lead to the erosion of the employment relationship, and new forms of work that do not always afford adequate labour protection. This affects above all workers in diverse forms of work arrangement such as temporary labour or dependent self-employment, and workers in new forms of work associated with digital transformation. These developments threaten the traditional model of industrial relations and will be a particular challenge for trade unions.

Workers’ organizations are demanding concrete steps on how to cope more effectively with the negative externalities of technological change while harnessing its potentials. Some trade unions are already advancing on these issues, for example around data protection and surveillance at the workplace as well as organizing in the platform economy, creating many good practices which could be exemplary for the labour movement as a whole. However, in many cases, these efforts are insular and do not lead to a more comprehensive response by the national and international labour movement.

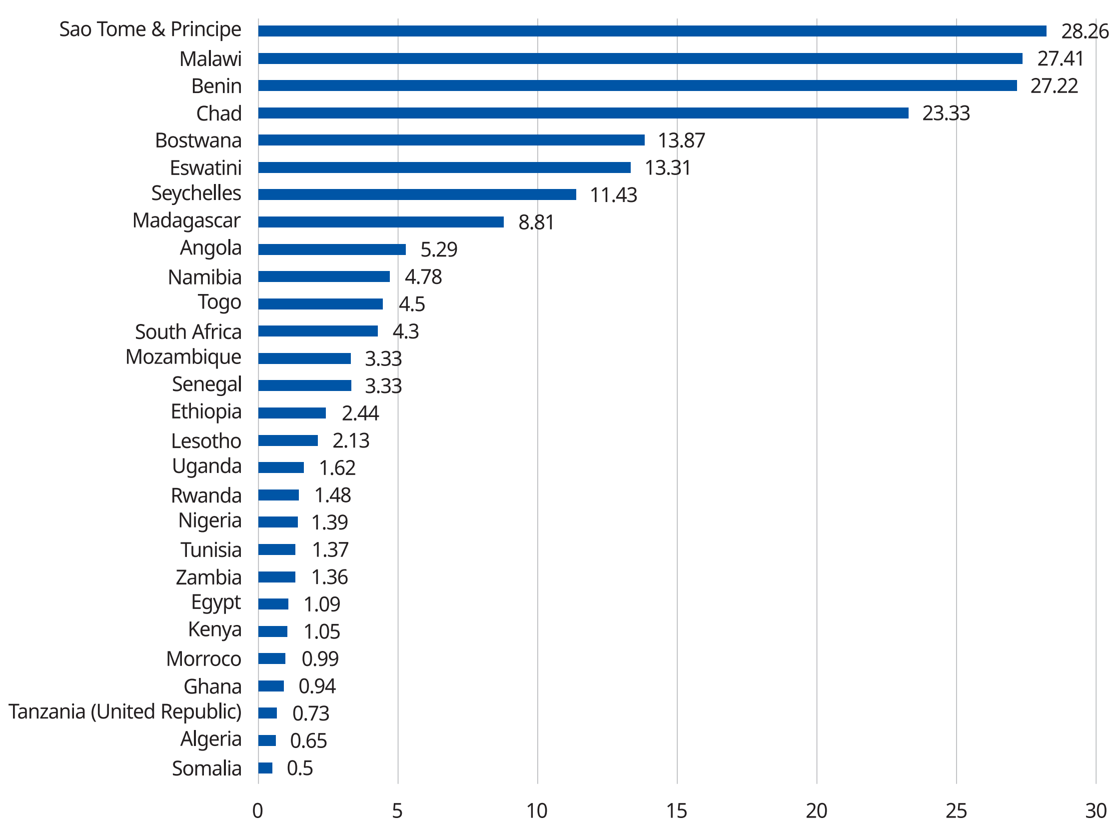
Factors affecting the adoption of digital technologies by trade unions

Before COVID-19, most trade unions (particularly those from the developing countries) were relaxed in their uptake of digital technologies and platforms to execute their mandate, continuing to rely mostly on physical interactions and high mobility. However, with the outbreak of COVID-19, digitalization has increased significantly in scale, speed and complexity and is fast-changing, putting pressure on trade unions to use digital technologies to shape their way of operating, advance membership servicing and strengthen advocacy and engagement with other national stakeholders.

However, the digital economy faces a number of challenges, which tend to limit optimum harnessing of digital technologies and internet for trade union advantage, even though they may recognize and appreciate the necessity of leveraging these technologies.

High internet data cost and the unaffordability challenge: High costs for mobile data in developing countries are driven by the lack of infrastructure, the high level of taxation in the mobile sector and low competition in the sector. Figure 2 shows the cost of a gigabyte in selected African countries.

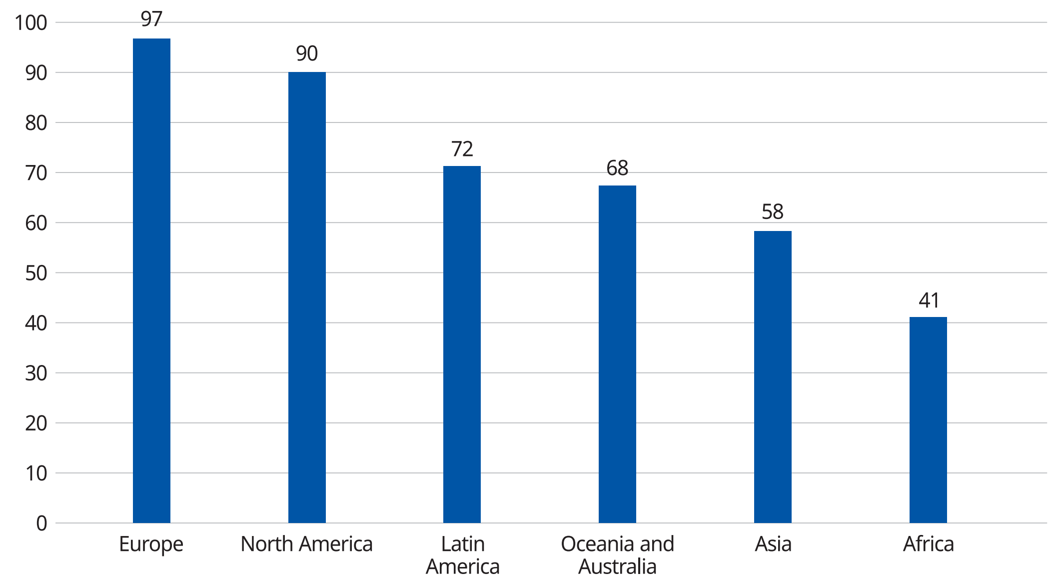
▶ Figure 2. Average price for 1GB of mobile data in selected African countries, 2020 (in US$)



Source: Faria 2021.

Figure 2 illustrates that in the majority of African countries the cost of a gigabyte is more than US$1, which is expensive for the majority of workers, especially those operating in the informal economy where incomes are low and unstable. Even for workers in the formal economy, the low wages make internet data and smart gadgets expensive, leaving some workers having to decide between internet and other equally important family welfare issues (food, rent and school fees). The situation has been made worse by the COVID-19 pandemic and disruptions of jobs and incomes at a time when workers needed to be engaged more online than ever. Figure 3 depicts the share of internet users in Africa as the lowest (41 per cent) compared to other regions.

Figure 3. Percentage share of population who are internet users, by region, 2020



Source: Statista 2020; Worldometer 2021.

Connectivity challenge: In June 2020, around 56 per cent of the population in sub-Saharan Africa lived within a range of 25 kilometres from fibre (Faria 2021). Limited internet infrastructure and perennial power cuts in some of the African countries also causes poor connectivity. Furthermore, the national lockdowns exposed the fact that trade union officials rely more on internet connection at offices than for their personal data. Thus, the closure of offices in the lockdown periods limited trade union officials from effectively connecting with membership online.

Below is a synopsis of some of the challenges of working from home, from a technology viewpoint:

- **Limited space:** following the closure of global functional systems, work, schooling, and vacation were all taken from homes. Unfortunately, not all workers have expansive enough residences to conveniently accommodate all the competing activities requiring concurrency. Limited space may contribute to sub-optimal delivery and performance.

- **Availability of internet facilities:** Not every home has business quality internet access. Even where there is internet access, it may not always be reliably available or always stable enough for non-disrupted connectivity.
- **Internet affordability:** The cost of internet bandwidth remains high in most parts of Africa; this makes effective remote collaboration challenging. Organizations that cannot afford good office space for their office-based staff may find it difficult to afford the internet capacity for desirable levels of work-from-home performance.
- **Privacy and data protection:** Since the primary method of communicating is purely through e-mail and online tools, the chances of succeeding in enforcing organizational data protection policies significantly diminish. In addition, being a potential avenue for data and privacy breaches may lead to legal suits and huge associated costs.
- **Exposure to hackers:** The use of mobile devices to connect to organizational information and work resources opens avenues of vulnerability that may be exploited for data breaches and hacks. While technology solutions to adequately protect online workers exist, the levels of investment required for effective protection of such remote workers may be beyond the reach of the less funded workers' organizations.
- **Regular communication:** Maintaining consistent and timely communication between workers' organizations and employers' and workers' representatives is an imperative for successful delivery of the mandate of workers' organizations. Working from home poses a challenge of coordination of teams while at the same time taking away the benefit of being able to read body language and tone – things that are important when communicating, more so when negotiating the rights of workers.
- **Employee performance:** Monitoring and tracking of performance of employees working remotely is a challenge. Employers may exploit this challenge to unfairly target certain individual employees. Neither workers' representatives nor workers' organizations have the data and/or evidence required to mount a solid challenge against any such unfair employers and unfair treatment of workers.
- **Team building:** Workers' organizations are grounded on togetherness, resounding team spirit and a sense of oneness. In an environment where individuals work away from the office, achieving the team spirit required of organized workforce could be a challenge. Workers' organizations are required to be innovative and adopt technologies and strategies to build the right culture and team spirit for successful delivery of services to their members.
- **Gender-based violence and inequalities:** Lockdowns have meant that family members who had previously hardly spent any significant part of the day together were suddenly compelled to live behind the same doors for months. Besides little-known incompatibilities emerging, locking people in homes was stressful for some couples to bear, especially with the rampant reductions in income that families experienced. And the fact than children had to adopt to online schooling meant that parents had to play teachers' roles – which to a great extent reduced the number of hours some

parents spent performing their office work. Reduced employee performance meant loss of promotion opportunities for the affected individuals – who tended to be primarily women or men with lesser incomes within family setups. ICT-enabled and empowered workers faced fewer challenges.

COVID-19 and digitalization: Challenges and gaps in trade union operations

Collective bargaining

Collective bargaining is one of the core mandates of trade unions. Whilst it was already under threat before the outbreak of COVID-19 due to emerging forms of employment (precarious work) and declining trade union density, the outbreak of the pandemic worsened the situation.

A survey by the Southern Africa Coordination Council (SATUCC) in 2020 on the impact of COVID-19 on workers in Southern Africa reveals that many collective bargaining negotiations stalled. Fifty-eight per cent of the respondents indicated that collective bargaining rights were suspended. In other cases, the employers and the trade unions resorted to virtual collective bargaining through various platforms such as Zoom, Google Meet and Skype. For trade unions, their internal technological deficits, including limited smart gadgets and financial resources for long connections, had a detrimental effect on their effective participation in virtual collective bargaining processes.

Additionally, virtual collective bargaining presents its own challenges compared to physical collective bargaining meetings. The art of collective bargaining incorporates factors such as reading and gauging of emotions, facial expressions and body language by both parties. For trade unions, who are usually in the weaker position, these factors assist them in communicating, motivating themselves and strategically overcoming conflicts, and reaching an agreement, all of which is taken away by virtual collective bargaining.

Furthermore, access mechanisms for organizing and setting up of a virtual collective bargaining meeting largely remains in the hands of employers, meaning there is a risk to manipulation of the settings they use. Bad employers, for example, can decide to mute or unmute speakers as a way of undermining the trade union representatives, especially those who are outspoken. Thus, it is critical for trade unions to take ownership of organizing and setting up these virtual meetings.

Workers' education and training

Workers' education and training programmes are key to keeping trade unions connected with their membership and for strengthening the capacities and capabilities of workers to articulate issues that affect them. The outbreak of COVID-19 challenged the traditional forms of trade union education and training programmes, which were predominantly physical. For example, in 2019 ILO/ACTRAV coordinated a course titled "The Evolving World of Work: New Learning

Methodologies and Technologies for Enhanced Trade Union Education in Africa". This was a blended course (with online and face-to-face components); participants were education officials drawn from national (federation) centres, trade union research institutes, global union federations (GUFs), and regional and subregional trade union organizations in 15 countries. The course was an opportunity for trade unions to rethink how to reconstruct trade union education and training programmes in the era of digital technology.

Opportunities arising from digital technologies for trade unions

Closing the youth participation gap

The integration, inclusion and participation of young workers in trade unions had been gaining momentum, though on a slower scale. Global statistics underscore that the youthful population engages more on internet. Statista (2020) reveals that 18 per cent of internet users are 18 to 24 years old, 32 per cent between 25 and 34 years, 19 per cent between 35 and 44 years, 14 per cent between 45 and 54 years, 10 per cent between 55 and 64 years and 7 per cent over 65 years. This means that half of the global active population of internet users are under 35 years old.

COVID-19 has made it more apparent that trade unions need to adopt digital programmes that catch the attention of young workers, as the majority of them are now more active on social media. Advancements in digital technology would provide unions already struggling to connect with younger workers with a means to communicate with this group via a medium with which the younger generation is comfortable. It has become more apparent during COVID-19 that trade unions need to rethink, develop and experiment different virtual ways of communicating and reaching out to new and younger potential members.

Capturing wider audiences beyond the trade union membership

In the context of declining trade union density and in the absence of physical meetings and mobility restrictions due to COVID-19, it has proven critical for trade unions to escalate e-campaigning and e-mobilization of membership and non-members (workers and general citizens) including workers in the informal economy through various social media and other online platforms. Since social media platforms have become popular in the political sphere, the same must also apply to trade unionism so as to ensure that their visibility and relevance is consistently maintained and escalated.

Global experiences have proven that campaigns through virtual platforms (especially Facebook, Twitter and WhatsApp groups) and trade union websites have assisted unions to connect and to build alliances, networks and solidarity not only among workers but also with other civil society organizations.

Shifting more towards e-campaigning and e-mobilization has become imperative to complement unions' traditional forms of exerting pressure on governments, employers, parliamentarians and opinion leaders to uphold workers' rights and decent work in general. Examples of effective and successful trade union e-campaigns include the "Prices Must Fall" and "Wage Theft" campaigns by the Zimbabwe Congress of Trade Unions (ZCTU) and National Organisation of Trade Unions (NOTU).

Closing the gender participation gap

Historically, increasing women's participation in trade unions, leadership and decision-making structures remains a fundamental challenge for the labour movement. Leveraging on digital technologies provides an opportunity for women trade unionists to overcome the physical and financial barriers that historically limited their effective participation in trade union activities. However, trade unions need to continue supporting and encouraging women's participation in online programmes and various social media platforms through funding women-only webinars and other related programmes.

Innovative strategies and technology solutions for trade union digitalization processes

What would it really take for a workers' organization to be well prepared for working from anywhere from an ICT-preparedness perspective? Table 1 provides useful insights from a typical African country context.

Table 1. Indicative ICT costs for an office with ten users, typical African country (in US$)

ICT service/Product type	Cost/month (US$)	Annual cost (US$)	One-time/Recurring
LAN Setup ,10 users		50 000.00	One-time
Office productivity tools, 10 users	400.00	4 800.00	Recurring
Laptops, 10 users	1 500.00	15 000.00	One-time
Security software		4 000.00	One-time
Home office setup, 10 users	400.00	4 000.00	One-time
Office internet	1 000.00	12 000.00	Recurring
Website setup		1 000.00	One-time
Website maintenance	1 000.00	12 000.00	Recurring
Collaboration tool (e.g. Zoom)		10 000.00	Recurring
Mobile phone	500.00	5 000.00	One-time/2 years
Mobile phone units	500.00	60 000.00	Recurring
Home staff internet	250.00	30 000.00	Recurring
Insurance		2 000.00	Recurring
ICT support	10 000.00	120 000.00	Recurring
Supplies		5 000.00	Recurring
Total		**334 800.00**	
Paper document conversion to e-version	1.00/page		Dependent on numbers

Source: ICT and internet providers in Nairobi, Kenya.

This indicative budget is not small by any means, even for commercial organizations. The implication is that the less financially endowed workers' organizations may face a challenge with work-from-home arrangements. In fact, costs for data communications in West Africa and landlocked nations in Africa are even higher than those presented above, aggravating the challenge of being able to tap into ICT for business continuity during pandemics.

Some of the options for workers' organizations include:

- **Non-profit pricing:** There are technology providers who have non-profit offerings, some with pro-bono options, e.g. Microsoft offers Office 365 for free to small non-profits. Qualifying workers' organizations may seek availability clarifications from applicable vendors.
- **Open-source solutions:** This is another option that workers' organizations may resort to, at least for some of their business requirements such as content or database management systems like MySQL. While some effort towards customizations and configurations may be required, where sources of funding are not forthcoming, open-source software would be an option, although it should be noted that there are limitations and disadvantages to free software. This option would need to be approached with consideration of relevant laws and legislations (such as General Data Protection Regulation, GDPR) in mind.
- **High net worth individuals:** Workers' organizations may reach out to and seek financial support from such individuals with excess disposable incomes who are willing to contribute towards improving workers' organizations delivery. Information on such funding opportunities is available on the internet.
- **Solidarity support funding:** There are organizations and/or governments offering relief/ stimulus packages that workers' organizations may tap into. These include international funding institutions, foundations, governments and multilateral organizations, which may have funding opportunities for well-supported funding proposals which workers' organizations may explore. Solidarity support from well-endowed trade unions organizations also remains a viable option.
- **Create a hybrid work culture:** There is a high likelihood that for most organizations, having run their businesses mainly "away-from-the-office" for about a year, there will be an increased shift towards work-from-home practices. The recent study by Global Workplace Analytics mentioned above found that remote working has grown by 173 per cent since 2005, and that over the past ten years the number of people working primarily from home had increased by 115 per cent (Global Workplace Analytics 2020). Available data show that employees who spent 60–80 per cent of their working time away from the office had the highest rates of employee engagement. Trade unions may wish to push for policies that entrench a flexible work culture where workers are encouraged to freely choose where to work from.
- **Invest in cloud-based collaboration solutions:** Organizations that employ remote collaboration tools and systems are more prepared to facilitate business continuity in times of emergency. Cloud-based collaboration tools (such as Zoom, GoToWebinar,

and MS Teams) have advanced significantly to accommodate business quality virtual collaboration sessions, and at a lower cost. In fact, some collaboration tool providers today do not charge for one-to-one collaboration sessions. Why cloud-based? – they are accessible from anywhere, are resilient with globally distributed data centres that are suitably constructed and located to withstand most disruptions.

- **Empower the trade union workforce:** To ensure the workforce is well prepared for any unforeseen eventuality, workers need to be provided with ICT equipment and software solutions, especially cloud-based, that have the appropriate specifications to meet business requirements. The tools provided should have capabilities to connect securely to corporate systems, with the workforce adequately trained in the ICT system use and handling.

  It is essential to ensure that workers' partner organizations representing the interests of workers, and by extension workers themselves, are adequately facilitated for seamless delivery of services in times of difficult situations that may limit physical access to an office setup.

- **Digitization of documents and business processes:** To complete the resilience journey, workers' organizations and affiliate organizations or groups need to ensure that each of their paper documents is converted to an electronic file format. There are a dozen suitable electronic document management systems (eDMS) to choose from, as there are as many companies that specialize in document archiving that organizations may use to fully scan and file all organizational documents.

  The COVID-19 experience has shown that dealing with paper-based documents will soon be a practice of the past. Organizations therefore need to invest in and adopt digital signature systems that, as much as possible, tightly integrate with their chosen eDMS.

  Automation of all organizational business systems and approval workflows will not only contribute towards better organizational performance and offer required transparency and accountability but also make it possible to carry on the business of workers' organizations with or without emergencies, from anywhere. Adopting and deploying blockchain or other technologies that ease interoperability between and among partner organizations' systems will place the organization in a suitable place to deal with future crisis. A workers' organization cannot afford to leave behind its partner member organizations – the marriage has to persist, regardless of the cost and/or circumstances.

Recommendations, way forward and conclusions

This section provides recommendations that workers' organizations may adopt or employ to ensure organizational readiness to continue business during the pandemic. The section also makes innovative suggestions that affect the operations of specific trade union functions.

So, what are the technology enablers for working from home for a trade union organization? They include:

1. A **laptop** with a high-resolution (possibly adjustable) camera and latest office productivity software installed. It is desirable that staff are provided tools such as sit/stand desks, ergonomic chairs, and appropriate wide monitors or where possible dual screens.
2. A **smart phone** or a tablet is no luxury with "work from anywhere" practice, hence it is an important provision, especially in some parts of the world where internet stability is not guaranteed, therefore making a smart phone an appropriate backup for hotspotting for internet access when a regular broadband or WiFi link is down.
3. Sufficient **internet connectivity** that allows easy and reliable access to work resources, whether located on-premise (at the office) or in a public or public cloud. Internet provision should preferably have a cable internet backbone, with adequate signal distribution within residences.
4. Easy-to-use suitable **collaboration and meeting tools**. Virtual meeting rooms are fast replacing physical meeting spaces with the advent of the full-blown working-from-home experience. It is essential that teams continue to be able to collaborate and work together effectively and efficiently, much as they would in a traditional office setting. Each worker should therefore be able to call colleagues, invite them to meetings, book meeting rooms, appraise teams, join meetings, and host seminars (now webinars) with the same or better ease as when in a physical office setup.
5. Workers should be empowered with the **knowledge and skills** required for successful utilization of the technology tools and systems necessary for high performance as they work from home or anywhere else. This should include proficiency in web or mobile tele- and video-conferencing tools.
6. **Information security and data protection.** Working from home must not compromise privacy and compliance requirements. The practice has increased the pool of potential cyberattack victims due to increased internet presence in the new workspace. Tools to ensure requisite protection of remote workers are therefore a requirement; these range from stringent account/password management policies, up-to-date antivirus solutions; remote monitoring, updating and patching systems; virtual private networks; desktop and residential internet firewalls; disk encryption; mobile device management tools; multi-factor authentication; and technology tools for ICT staff that enable remote monitoring and management of device security, be they laptops, mobile devices, IP cameras or other home internet-connected devices that make up the Internet of Things (IoT).

7. Fully **automated business process workflows**, incorporating document management capabilities and secure integrations with partner systems with support for secure digital signatures.
8. All the above should be backed up with a solid **ICT support system**. A well-staffed call centre available to support workers on a 24/7 basis would be most suitable to support the flexible work habits of working from home.

Some of the innovative suggestions that affect the operations of specific trade union functions include:

Strategic planning for ICT within trade union structures

Information technology must be seen to be important for all trade union operations, ranging from membership recruitment and organizing, delivery of services, collective bargaining, research, training and education, to political campaigns and maintenance of democratic principles. Trade unions must also recognize information technology as a critical force in shaping their relevance in the future.

In this context therefore, in a bid to enhance processes and functions, it is recommended that ICT should be established and supported as a core component within trade union organizations, and therefore represented at higher levels of decision-making. This will enable the ICT leadefship to be able to budget, plan, organize, direct, control and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems within the organization to fulfil its mandate to the workers.

Additionally, there is a need to establish an ICT Department headed by an ICT Manager (or Director) at senior decision-making level. This strategic functionality will enable the greater collaboration with other decision-makers in other departments to identify, recommend, develop, implement, and support cost-effective technology solutions and therefore define and implement ICT policies, procedures and best practices. It is within the ICT Directorate or Department that a more accurate assessment and diagnosis can take place regarding the absence of, or inadequate, ICT infrastructure and capacity. To implement these recommendations, it may be important to redesign organigrams.

Revising and reshaping collective bargaining negotiations and agreements

There is need for trade unions to ensure that provisions for digitalization and technology diffusion are integrated into collective bargaining agreements and in workplace social dialogue structures such as workers’ committees and works councils. It is critical to ensure that trade unions and workers are engaged at an early stage of the introduction of new technologies.

Given the peculiar challenges of virtual collective bargaining, trade unions have the privileged position of having members at the shop floor level who are well versed in the performance and financial position of the company. Many companies are using virtual platforms to communicate their performance to existing and potential customers and clients. The ease of availability of information in the era of open data creates a platform in which unions and representatives have freer access to the kind of information that is often the subject of conflict (ACAS 2011). Thus, trade unions should use this privileged position combined with use of various digital technologies for data collection and conducting trend analyses of company or sectoral performances that will enable them to be more effective in collective bargaining at all levels.

The increasing global capital of interconnectedness includes the fast internet speeds greatly enhances access to information. In the same manner, the global labour movement needs to escalate its interconnectedness and solidarity, and mobilize and unite workers around workers' demands that challenge negativities arising from global capital operations. The Global Union Federations (GUF) exposure to digital technologies can assist various trade unions to win in this area.

Reconstructing worker education and training

Not all traditional face-to-face learning courses can easily be used for or are compatible with online learning. Therefore, trade unions and their service organizations (research and education institutes) need to:

(i) Collaborate, reconstruct and convert their traditional face-to-face learning courses and modules into online-compatible learning modules, courses and e-materials, and deliver them through webinars.

(ii) Invest in upgrading office ICTs.

(iii) Develop internal expertise in online teaching and learning methodologies. These can be in the form of purely online courses or blended courses (a combination of face-to-face and online education).

(iv) Seek the support of ILO/ACTRAV in developing tailor-made online courses or modules suitable for national and sectoral education and training (such as Learning Modules On-Line – LEMON) as coined by the Council of Europe (CoE).

(v) Ensure that such online courses are accredited, licensed and monitored for quality assurance and compliance purposes.

(vi) Cooperate with labour-friendly experts and/or CSOs and academia so as to build alliances and partnerships critical in a globalized world.

(vii) Develop specialized ICT courses for trade union members/grassroots, trade union structures and workplace-based committees such as workers committees, OSHE committees and gender committees on how to interface with online and virtual platforms.

Development of online/web based trade union applications (apps) and databases

Digital technologies allow trade unions to develop their own trade union and worker applications and union databases that are accessible to their membership. This can act as a leverage point for e-recruitment with online stop-order forms, as well as capture the interest of young workers to join trade unions. Web applications can have services of e-recruitment or e-payment, given the varying financial situations of workers and payment schedules which vary among individuals. The applications can also contain critical information such as online collective agreement guidelines, labour law and regulations, SDGs, socio-economic rights, apprenticeship and training opportunities, women- and youth-related issues, among others. These applications will keep membership engaged and boost opportunities for articulation of their issues.

Enhancing women's participation in trade unions through digital technologies

Women members should self-motivate themselves to capitalize and strengthen networking and solidarity among them, using the numerous channels brought about by digital technologies and online platforms. They should create their own content and disseminate as much as possible digitally. Already the various WhatsApp platforms have been a stepping stone for more engagement among women workers, but discussions need to escalate from mere sharing of challenges and networking to sparking constructive debates that challenge patriarchal norms and systems in trade unionism; challenging themselves to take up leadership and decision-making spaces; escalating online mentoring/confidence-building programmes which would otherwise not have been possible in face-to-face engagement; strengthening intersectoral, subregional and international exchange programmes; e-mobilizing and e-campaigning on ratification of the ILO Violence and Harassment in the World of Work Convention, 2019 (No. 190); and enhancing solidarity among women workers under the motto "an injury to one is an injury to all".

Engage governments to address the connectivity challenge

All countries depend on the quality of their infrastructure to improve their productivity, international competitiveness, economic growth and improvements in living standards of their citizens. Trade unions need to demand that their national governments pay special attention to resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. In this context, the term "infrastructure" would need to take a broader perspective to incorporate a broad range of factors including physical infrastructure such as roads, bridges, ports and communications infrastructure as well as socio-economic institutions such as the legal system, government regulatory systems and even considerations as intangible as social norms of behaviour. Trade unions must join other partners in advocating for the development of guidelines and best practice in the promotion and development communications industries and improve services for enterprises and citizens.

References

ACAS (Advisory, Conciliation and Arbitration Service (United Kingdom)). 2011. "Social Media in the Workplace". Website: https://archive.acas.org.uk/media/3187/Social-media-and-its-impact-on-employers-and-trade-unions/pdf/social_media_FINAL_3108111.pdf.

Faria, Julia. 2021. "Average Price for Mobile Data in Select African Countries 2020." Statista Blog. 4 March 2021.
https://www.statista.com/statistics/1180939/average-price-for-mobile-data-in-africa/

Global Workplace Analytics. 2020. "Latest Work-at-Home/Telecommuting/Mobile Work/ Remote Work Statistics". Website:
https://globalworkplaceanalytics.com/telecommuting-statistics.

ILO. 2018."Industrial Revolution (IR) 4.0 in Viet Nam: What Does It Mean for the Labour Market? Viet Nam Country Brief", Policy Brief.

—. 2019a. *Work for a Brighter Future: Report of the Global Commission on the Future of Work*.

—. 2019b. ILO Centenary Declaration for the Future of Work. International Labour Conference. 108th Session.

—. 2021. *World Employment and Social Outlook: The Role of Digital Labour Platforms in Transforming the World of Work*.

Mwamadzingo, Mohammed. 2003. *Bridging Africa's Digital Divide: The Role of Trade Unions in English-speaking Africa*. Geneva: ILO.

Nilles, Jack M. 1975. "Telecommunications and Organizational Decentralization." *IEEE Transactions on Communications* 23(10): 1142–1147.

Statista. 2020. "Number of Internet Users Worldwide from 2009 to 2020, by Region". Website: https://www.statista.com/statistics/265147/number-of-worldwide-internet-users-by-region/

Worldometer. 2021. "Regions in the World by Population (2021)". Website:
https://www.worldometers.info/world-population/population-by-region/