TRAINING MATERIAL

Bargaining officers, negotiators, and union staff

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PSI

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Contents

Summary

This training material introduces three resources to support you in your collective bargaining– Digital Bargaining Hub, Data Rights Tool and Guide to the Co-governance of Algorithmic Systems in Workplaces. They all relate to the digitalisation of work, workers and public services. They are designed to assist you and your union in your work fighting for a more equitable balance of power in the workplace.

The stakes are high. As workers are increasingly evaluated, tracked and surveyed by digital tools and systems, unions must do all they can to protect the rights, freedoms and autonomy of the workers. Whilst digital technologies and some forms of automation can benefit workers, the negative consequences of an unregulated and uncontrolled digital transformation are many. Labour markets can be narrowed excluding minority group workers, or others who fall outside of these mathematically created norms for who a "good" worker is. Discrimination will and already is flourishing. We risk a deskilling of the workforce as automated systems prescribe what workers should do, and what they shouldn't.

A result of the 'always-on' nature of digital technologies is an intensification of work as it expands into our private lives. Sometimes we experience this head on as we are notified when emails or messages arrive throughout the day. Other times we do not notice the pervasiveness of the technology as the apps we have been asked to download on our phones collect data from us even when we are not working.

And digitalisation is being used to increase corporate control, outsourcing and privatisation. The data that public services collect should never be left solely in the hands of corporations to exploit for profit rather than democratically controlled quality public services.

In our journey towards reshaping the digitalisation of work, many of us will find that management needs to be made more aware of the consequences of accepting at face value the promises and statements promoted by big tech firms promoting their digital tools and systems. We must protect the rights of workers and users of public services and ensure management understands the issues and their responsibilities.

Reshaping the digitalisation of work and workers will take time. Hopefully the three resources we present here will boost your efforts. Feel free to share this material with your colleagues. Teach forward – inspire others. Also, make use of the network of Digital Rights Organisers in your region. They can be a sounding board for your deliberations, or help you form strategies and responses. PSI's regional offices can put you in contact with the network.

Together we can shape a digitalisation that works for workers and public services.

/Daniel Bertossa

Assistant General Secretary
Public Services International

Our Digital Future

PSIs Our Digital Future Project is a 3 year capacity building project to equip unions with the information and skills to influence the digitalisation of public services and work. The project is well underway. In 2021, PSI trained regional Digital Rights Organisers - a group of union experts who will be the regions' resources and experts on digital change. In 2022, trade union leaders participated in workshops to discuss their union's role in supporting workers to tackle the digitalisation of public services and employment.

We now turn our focus to those of you who will be doing the collective bargaining in your union. You might be a union leader, a negotiation officer, shop steward or member of the union staff who supports collective bargaining.

Why this project?

The Covid-19 pandemic has accelerated the digitalisation of public services, often with the stated objective being to make the services more efficient and productive. Digital - or more correctly 'algorithmic systems' - are rapidly being introduced into many public service sectors. This transformation is not neutral. Across the world there have been numerous examples where digital systems and tools have harmed members of the public and workers alike (Colclough 2022)

Although some governments are tabling, or have introduced, new regulations, laws and bills[1] to curb these harms, the use of digital systems to manage workers, through so-called 'algorithmic management' is one of the least regulated areas of digital deployment. Workers' rights over the data used, analysed, bundled, and passed on are poorly defined in many data protection regulations – if they at all exist. But so are workers' rights to be party to the assessments of the technologies, to propose changes, and to co-decide what these systems can acceptably do, and what they can't.

This material supports the training sessions that will be provided. The sessions will be practical and hands-on focussing on learning about, and using, the tools and

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[1] For example, most newer data protection laws, the Canadian draft federal privacy Bill C-27, the draft EU AI Act, the 2022 adopted Dutch human right impact assessment (HRIA) obligation for the public institutions use of algorithms, and the 2021 New York City Law on Preventing Bias in Automated Employment Assessments

guides PSI has created to bolster collective bargaining and political advocacy concerning all things digital.

Much is at stake. The harms workers are already experiencing are felt here and now. The long-term consequences of the quantification of work and workers as everything is turned into data points that are used to predict, compare, evaluate and score the actions of people could well be the end of diverse and inclusive labour markets. Unions must act!

The growing power imbalances in workplaces that are caused by the deployment of digital technologies and the hoarding of data are a global phenomenon. To reshape the current mode of digitalisation, unions must cooperate and share both good and bad practices, as well as queries and uncertainties. Helping one another table an alternative and sustainable digital world of work that puts members' privacy and fundamental rights at the core will be key to ensure quality public services and decent work for years to come.

The digitalisation of work and employment relations also has an impact on many issues of traditional union concern: discrimination and bias, occupational health and safety, physical and mental wellbeing, working time, work intensity, work distribution, job security, training and wages. Yet the means through which these impacts are made are new and go to the core of what constitutes a digital tool or system: data and algorithms. Three key tools will be presented in this training material and the lessons.

1. PSI's bespoke Digital Bargaining Hub – a database of digitally-related collective bargaining clauses negotiated by unions across the world for mutual learning and inspiration.

2. PSI's Data Rights Guide - a step-by-step tool to support your negotiations for much stronger workers' data rights.

3. PSI's Guide to the Co-Governance of Algorithmic Systems in Workplaces – 21 questions you can ask management to hold them responsible, liable, fair and inclusive when deploying digital systems and tools.

Additionally, PSIs *Digitalisation: A Union Action Guide* provides background for public service unions and workers to better understand how these changes are affecting public sector workers and unions across the globe.

We begin this compendium with a short discussion of data and algorithms, their influence on work and workers, and why we need to build capacity to negotiate for the win!

Negotiating for the win

WHAT WE NEED TO KNOW ABOUT DATA AND ALGORITHMS

Before diving into the practical resources that aim to support collective bargaining and political advocacy on the digitalisation of public services and employment, it is important to understand the core features of digitalisation: data and algorithms that make this technological change so different from previous ones.

The digitalisation of work and workers inevitably means changes in how we work but also what skills and competencies will be needed. In some cases, the digitalisation of public services will cause layoffs as jobs get automated. It is therefore important that unions are equipped with the right knowledge to negotiate around these changes in collective agreements. As work changes, governments should be responsible for reskilling workers as well as for the associated costs of said. A clear strategy is needed, not least as many digital technologies "marginalise the already marginalised", for example women. Lastly, digital technologies extract and generate data. These data and the analysis derived from them affect our privacy, our private life, and our rights.

Data

Data is being extracted from our actions and non-actions at a never-ending rate. Just think of your smartphone. It is a powerful computer that currently has 14 sensors in it. It follows your every step, as you (let's admit it) hardly go anywhere without it. It can show you the temperature, the route you should take, can connect you to the internet and all your friends. It can hear and see. It's powerful, it's handy, but it's also a surveillance apparatus like nothing else. It knows where you are. But also, where you are not. It knows whether you exercise, how often, doing what? It also knows if you don't. It and the apps on it, are gathering data, making statistical inferences (profiles) on you, and using all of that for advertising, but also ultimately for manipulation. The world that is offered to you, the advertisements you see, are algorithmically determined.

Add to that all the information you are sending out there when you use your credit card for what, or what you don't use it for. When you write something on social media, when you "like" a friend's post and don't like another, use government or

private e-services of any kind, when you use your loyalty card to the shop or simply browse the internet.

You are giving away data (information) that is used to profile and predict what type of consumer you are, what you most likely will vote, what type of worker you are, indeed who you are. These systems are obscure, hidden under the hood, surveilling you and predicting what you will do, should do, or what should be available to you and what shouldn't.

Think of all that data (picture it as a constant information flow you are knowingly or unknowingly giving away about yourself), and ask what influence it can, or might have, on your work and career? Maybe some of you have a **LinkedIn** profile. Now, data miners know your gender, age, what you do and don't do, and also what skills/education/work experience you have. It is not difficult to put a profile together on the type of worker you are: investable or less so?

It's Not Just About You

"*I've done nothing wrong, so who cares if they take my data?*" If you can hear yourself say this, you are not alone. The thing is: this is not just about you. Your data says a lot about you, yes. But it can have a huge impact on the work and life opportunities of people similar to you, or the absolute opposite. This is due to so-called "inferences" and the role they play in predictive analysis.

Statistics is the science of learning from experience, particularly experience that arrives a little bit at a time. Predictive analysis takes all the experiences extracted on your actions and non-actions, combines them with folks like you, or very different from you and churns them through powerful computational systems. The result is estimations on what you, and others like you or dissimilar to you, are likely to do in any given situation. Will your political affiliation change if you constantly are fed certain pieces of news – also fake news? Will your speed of work drop if you are working next to someone of this or that age, gender, or ethnicity? Will you buy organic food if you are shown certain advertisements? Research has shown that even when employers try to reach all audiences with a potential job advertisement, the audience is mediated by, for example, Facebook's algorithm. It is oftentimes *that* algorithm, rather than the employer's, that decides whether you are a likely candidate, and should see the job announcement or not.

Data at Work - Data is Power

The data that is being extracted is essentially information about our private actions. It's our data. Even in workplaces, the surveillance and monitoring of you as a worker that essentially creates data about you and what you do (and don't do) is information about you. That the employer knows whether you are talking to a colleague, or are going to the bathroom 5 times, or spending time by browsing the internet or taking a break, and how they then use this data, is a question of power.

The employer and the systems they use are creating numerous "facts" about you and your colleagues that can have a real-life influence on your work life, employment continuity and career opportunities. Did they ever ask you for permission? Did they even inform you about these systems? Do you know what data is being extracted and for what purposes? Does the employer sell datasets to the many data brokers out there? If they do, have they told you that information derived from your actions and non-actions is an additional income stream? Where does all of this leave your privacy rights? In Addendum 1: Data Rights – Additional Information we show how management typically extracts data from you.

A result of this surveillance society and labour market is the unequal distribution of power. If we as workers do not know what data is extracted, for what purposes, where it is stored, who has access to it, and whether it gets sold on, we are essentially disempowered. If we additionally have few, if any, rights to edit or block the data and the inferences derived from them, we are essentially being objectified. Turned into mathematical equations that either deem us to be productive, or effective or not so.

The thing is, whatever the "result" be it horribly wrong, or worthy of an explanation, can have very harsh, very real impacts on our work life, job and careers. This objectification, or as some call it, quantification of workers, is turning labour – both the individual worker as well as us all as a collective sum of the parts – into a commodity.

Data protection regulations

According to this [UNCTAD database](#) out of the 54 countries in Africa, 33 (61%) have data protection legislation, 6 have draft legislation and 10 do not have any data protection laws. Data is lacking for 5 countries.

Commentators suggest that there are several reasons why enacting data protection regulations in Africa has not been as swift as in Western countries. First and

foremost, the lack of regulations across the continent underscores the need for resources. There is not enough funding allocated toward government employees training or creating entities within the government that could be responsible for data protection and privacy, in general. Secondly, cybercafes are quite popular in Africa, as most people do not own a personal computer. This makes it impossible to exercise control over the use of people's personal data. Thirdly, sensitization of the public requires funding, as well. The fact that the continent is vastly populated makes that task tedious (iapp 2021).

Privacy International warns that Africa is a testing ground for technologies produced elsewhere in the world and calls therefore for much stronger data protection regulations to protect the African citizen's rights. The Cambridge Analytica scandals in Nigeria, Kenya and South Africa quickly led to the signing of new data protection laws in the three countries aimed to place restrictions on the collection and use of digital data by governments and private corporations. However, with the low implementation of data protection regulations, the continent's inhabitants are still very much excluded from enjoying basic rights, even though, as Privacy International warns, their personal information is a valuable commodity in the global market.

A 2021 report by Access Now titled "Exposed and Exploited: Data Protection in the Middle East and North Africa" asserts:

> "Across the Middle East and North Africa (MENA), data protection legislation is still in its infancy, and it remains a low priority in countries where data protection laws are either very weak or non-existent. Nevertheless, governments have been quick to introduce proposals for use of technology that are data-heavy, such as national digital identity programs, biometric passports, and e-health services, disregarding how technology can be used to infringe citizens' privacy or exploit their personal data. Where data protection laws do exist, enforcement is problematic. National security agencies often enjoy unrestricted access to citizens' personal data, and private companies exploit and sell this information for profit without users' knowledge or consent."

Are workers included in the regulations?

Workers seem to be covered by the data protection regulations that are in place in the region, although not explicitly mentioned. All regulations rely on "informed consent" as the legal basis for processing data – including at work. This is contrary to the European data protection regulation that explicitly says that given the power imbalance between workers and management, workers will never be entirely free to offer their consent.

For more information about data protection regulations across Africa and MENA please see the Training Material for Digital Right's Organisers.

Algorithms

There are many terms that describe the inner workings of digital systems. At the core of most digital systems are algorithms. Algorithms are a series of mathematical operations: equations, algebra, logic, probability, calculus that are translated into computer code. This code is then fed with data, some of this data is from the real world (for example, information about your whereabouts throughout the workday), other data is "synthetic" – data that simulates the real world.

Algorithms are a series of instructions that show from start to finish how to accomplish a task or solve a problem. Think of an algorithm as a recipe. The algorithm is tasked to make the best tomato soup. It is *instructed* to cut 200 grams of onions, fry them off, add the garlic, then use 2 cans of tinned tomatoes. The result of the algorithm will be very different if you change the order of the instructions, for example if you

> **Definition of an Algorithm:**
> **"a set of rules, in computer programming code, for solving a problem or performing a task"**

fried the tomatoes and not the onions. So, what counts here is the **1. The purpose of the system, 2. The data, 3. the instructions** and **4. the order of those instructions.**

Think of an algorithm as a recipe:

It knows what it is making (a soup)

It is fed data (ingredients)

It has clear instructions (fry 350 g onions, then add peeled tomatoes)

The order of instructions is set (fry the onions before adding tomatoes)

For you as union representatives, this can translate into a series of issues you should raise with management to hold them responsible and liable to the systems and tools they are deploying and the affects these can have on workers and members of the public.

Example of an algorithmic system at work

For example, let's imagine an **automated scheduling system** for homecare workers.

- Its purpose is to increase client numbers per worker

- Its secondary purpose is to improve client satisfaction.

- It extracts historical data from all the previous routes workers have taken relative to client locations and client satisfaction rates

- In this order it has been instructed to match route optimization with client "preferences"

This scheduling system could have several highly negative impacts on workers. Work will become more stressful as the number of clients per worker increases and/or the time allocated to each client decreases. Client "preferences" can lead to biases against less represented groups of homecare workers. In addition, workers who do not "match" client preferences might receive the least favourable working times as well as an increase in the percentage of more poorly clients (as they are

assumed to be so poorly their satisfaction rate is less significant). Discrimination abounds! Unions must act!

In this case, you could be negotiating with management around the governance of the system, including setting safeguards against discrimination and bias in place, and ensuring that the system purposes do not lead to worsened occupational health and safety standards. We will return to the issue of governance in the chapter below on Co-governing algorithmic systems.

Reflections

This technological revolution is very different from previous ones. The depth and the breadth of the social impact of this vast extraction of data and of algorithmic systems goes beyond what many of us can imagine. Given the current regulatory void, it is pertinent that unions demand that worker management digital technologies respect workers' rights, freedoms and autonomy. Collective bargaining clauses covering data extraction, for what purposes it is analysed, who has access to it, and what happens to it when the purposes have been fulfilled are called for. Unions must have a seat at the table in co-determining the purposes of digital systems and tools, in defining safeguards and clear limits to their use. It is to these practical issues we now turn. The first resource we will present is PSIs Digital Bargaining Hub – a treasure trove of clauses and guidelines already negotiated by unions across the world.

Digital Bargaining Hub

Digitalisation can affect every aspect of workplace organisation. This includes hiring processes, service delivery, evaluation, discipline, and more. These issues have long been important to trade unions, and in this moment of vast transformation, trade unions must continue to work towards a more equitable balance of power in the workplace. PSI has launched The Digital Bargaining Hub as a resource to help unions meet the challenges of digitalisation head-on at the bargaining table.
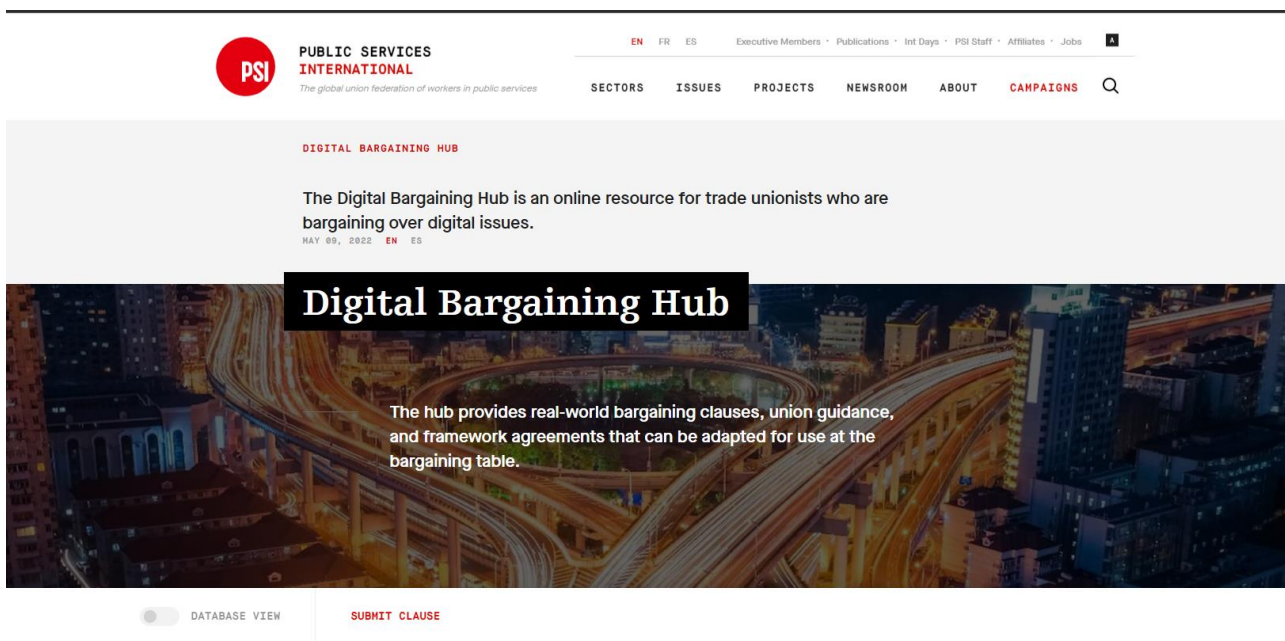
Contents of the hub

Figure 1: Digital Bargaining Hub: https://publicservices.international/digital-bargaining-hub

The hub is designed to help unions to prepare to negotiate and bargain about the impact that digitalisation is having in the workplace. The hub serves as a repository of language about digitalisation that has been taken from diverse source materials including works council agreements, laws, and other statutory provisions, union guidance documents, and proposed and negotiated language from collective bargaining agreements. These materials have been compiled to help union negotiators and other bargaining table and bargaining team members identify language that they can bring to the table to strengthen workers' rights in our current moment of technological transformation.

How to use the hub

Figure 2: Contents of the Bargaining Hub

These diverse resources were collected from PSI affiliates across the globe and are organized into 7 themes and 24 sub-themes. We encourage you to familiarize yourself with each of these themes and sub-themes and to consider what issues need to be addressed in your workplace. You can then review examples of language that other unions have developed to tackle the same issues, and, if necessary, modify it to meet the particular needs of your workplace.

Users can interact with the resource in two ways:
1. Report view – This view provides a brief summary of each theme, why it's important and view a handful of highlighted clauses taken from our database.
2. Database view - In this view, Hub users can review our entire collection of clauses. The database is searchable by theme or by choosing clause type, union, country, sector, and more.

Aiming to grow

PSI's goal is to build a living and comprehensive database on bargaining clauses and resources that deal with digitalisation. You can help us to grow the database by adding collective bargaining language that your union or local has developed. Submit your clauses via the link on the Hub site.

Negotiating Data Rights – a tool

Although some data protection regulations offer a legal baseline for workers' data rights, many do not. Much more must therefore be done through collective bargaining, sectoral agreements or, as is planned in Germany, new laws to specifically address and improve workers' data rights.

To support unions in navigating this journey, PSI has created a new online tool called the "Data Rights Tool".

Contents of the tool

Welcome to our negotiating data rights tool. It will step-by-step help you as union representatives to negotiate for much stronger worker data rights as management deploys digital tools and systems in workplaces. Whilst regulatory frameworks create a baseline for your negotiations, this baseline is in need of improvement through collective bargaining. Throughout the tool we will bring union best practices to your attention so you can be inspired by these in your negotiations. The tool will help you navigate through the process of knowing what digital tools and systems management are deploying, the legal rights workers have and the demands you on their behalf or they must make towards management.

The tool is accompanied by a worksheet. Click here to view a short video of how to use the worksheet. The worksheet has numerous tabs - one is a help tab called "Navigate this spreadsheet". Another has examples that can inspire you. Go through the worksheet in chronological order when you are prompted to in the data rights tool.

Going through the tool will seem like a lot of work at first, but as you get to know your legal rights and the obligations management have, you will breeze through this much faster. As you go along, consult our Key Terms and Definitions document.

Throughout, you will get links to legal clauses, current collective bargaining best practices and other tips and tricks. Please note, legal rights are afforded to the individual worker as a data subject. Unions per se have no (or at least very few) rights under data protection laws.

Lets' begin!

Next

Figure 3: Welcoming screen Negotiating Data Rights Tool

The tool consists of 4 main parts each with subsections. It is accompanied by a worksheet, which is a spreadsheet template that step-by-step will help you, the shop stewards and union officers to log information about the digital tools and systems used in a workplace.

Part 1: Getting to know what tools and systems are being used, incl. setting clear limits for invasive systems

Part 2: Mapping the data sources and setting clear limits for what data management can extract.

Part 3: Mapping automated decision-making and profiling and setting clear limits for what analyses/profiling is acceptable to the workers.

Part 4: Determining whether 3rd parties have access to workers' data and setting clear limits for what they can do with that data.

How to use the tool

As you progress through the tool, you will receive tips and ideas, as well as links to collective bargaining clauses from PSIs digital bargaining hub. You will be asked to check for certain rights in the data protection regulation in your area. Where legal rights exist, you will be nudged to use them. Where they don't, you will receive ideas as to how you can bridge the gaps through your negotiations with management.

It is a good idea to go through the tool in chronological order until you have become well acquainted with it. Early in the tool, you will be asked to open the worksheet. When you do, save a copy to your own device. Here is a short video that explains how to use the worksheet.

Note: the tool is detailed and aimed at supporting your negotiations on the various stages from data collection, analysis and 3rd party access and use of your data. It will take time to collect the necessary information from management, to map and apply the legal rights you might have, and to find out where you could set in in your negotiations to improve workers' data rights.

This tool is based on the Data Lifecycle at Work guide that was produced earlier in this project.

Co-governing algorithmic systems

Strongly linked to workers' data rights is the issue of having a firm seat at the table with regards to the co-governance of algorithmic systems in workplaces (theme 6 of the taxonomy). Algorithmic systems include Artificial Intelligence, Deep Learning and Machine Learning tools, but importantly also relate to more basic systemic analysis conducted in spreadsheets, or data analysis systems. Common for all of them is that they rely on data inputs, and they create outputs that can be predictions, probabilities, comparisons. In other words, the outputs are judgements.

In public services, many of these worker-management systems are private sector systems that the public services have licensed in or procured to third parties. This makes the co-governance even more important as it begs the questions: who has determined the purpose of the systems, the instructions inside the systems and the data used? Who also – the deploying public service or the designers/vendors – control and can determine any changes to these systems? Where does all of this leave worker's rights and workers' possibilities to demand change to them?

Contents of the Guide

To support unions in their unravelling of these system, the Co-Governance of Algorithmic Systems Guide lists 19 questions bucketed into 7 distinct themes. The themes are:
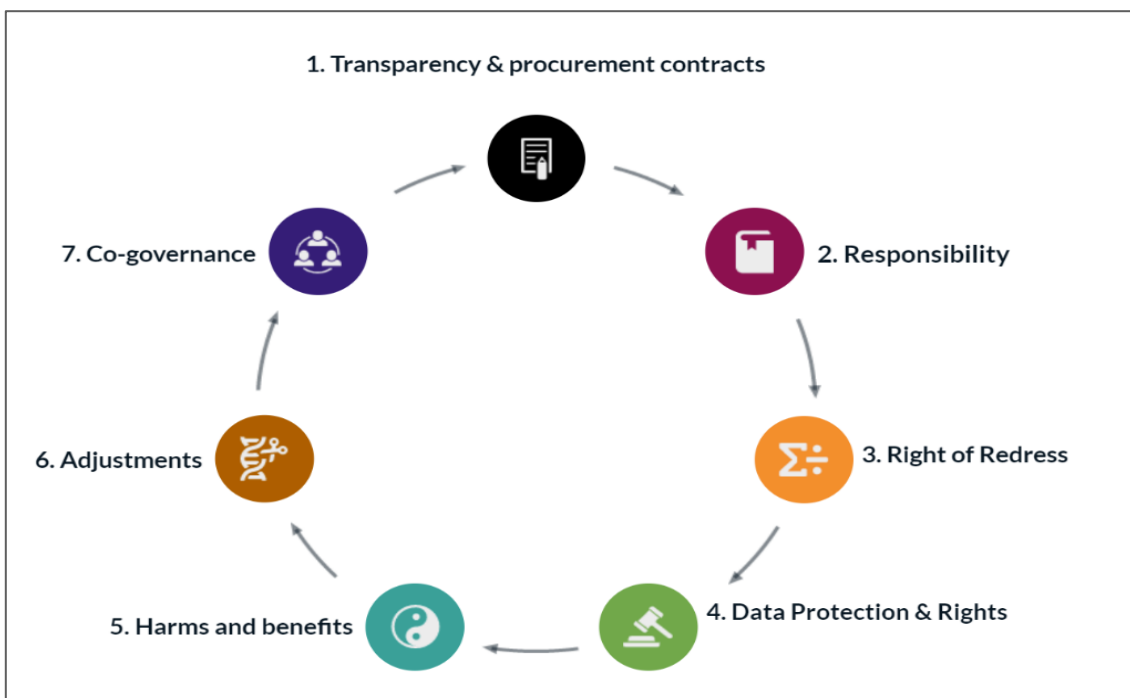

Figure 4: The seven themes of the co-governance of algorithmic systems guide

These 7 themes and the questions are key for ensuring that management is held responsible, liable and in control of procured or in-house designed digital systems. Read Addendum 2 for why these themes are important.

How to use the guide

The co-governance guide can be used in combination with the Negotiating Data Rights tool or alone. There are some overlaps. Prepare well. Before approaching management note down what you expect they will respond. When they do, check for any differences. Do you find management's response satisfactory? Push for more detail if you do not receive enough information.

Some shop stewards have experienced that the managers they usually are in contact with cannot answer the questions and need to ask other managerial colleagues. This is fine. The deployment of digital tools and systems in workplaces is also changing managerial responsibilities and knowledge. Maybe in your discussions you should prepare to have new managerial roles present – for example the technical experts, the procurement contract negotiators and the responsible heads in the department deploying these systems.

References and other useful material

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PSI (2019): "Summary - Digitalization and public services: a labour perspective" available at https://publicservices.international/resources/publications/summary---digitalization-and-public-services-a-labour-perspective?id=10296&lang=en

TUC (2022): "People Powered Technology: Collective Agreements and Digital Management Systems" available at https://www.tuc.org.uk/resource/people-powered-technology

Our Digital Future, project website: https://publicservices.international/resources/projects/our-digital-future?lang=en&id=11534&showLogin=true

Addendum 1: Data Rights – Additional Information

How do employers collect data?

Importantly, all worker management digital services and systems in workplaces extract workers' data. We can identify 5 ways that this takes place:
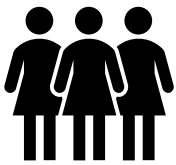
Direct collection: Your CV contains lots of valuable information: previous employers, to education, spare time interests and other activities. Employers can also directly collect data from their customers (what they buy, how often, what goods or services they look at on the website etc.) or from their current employees (for example how often they are sick, how many hours or shifts they work etc.).

Purchased data profiles: There are many so-called data brokers out there in the world whose whole business model is concerned with the buying, bundling and selling of data sets. These can be aggregated traffic data sets, or data about the "trustworthiness" of particular groups of people, or profiles about credit scores, health or education levels per geography or socio-economic status.

Data traces extraction: When you log on to your work email or server you are leaving a trace of your activities. What time did you log on, which documents have you accessed? But also some systems, such as Office365, create reports of how "productive" you have been, how much "concentration" time you have had etc. Does the management see these measures too?

Sensor derived data: Some offices have sensors throughout the building: Under desks to message how often that desk is used and vacated. On doors to see how often a room is used, or not. Some workers have to use handheld scanners or wearables such as a Fitbit or location tracking systems. Others have security systems in their work badge to help move throughout the building. All of these produce data that is, or can be, used by management.

Audio and Visual Data: Other types of data are derived from audio-visual systems. Call center workers' tone of voice and what they say are measured and evaluated. Mobile phone call tapping. CCTV or Facial recognition is used to locate and identify workers. Although highly criticised, some of these systems have been used to predict the emotional state of mind of workers: are they tired, do they look sad, frustrated, happy or nervous?

What characterises digital monitoring?

Regardless of the means of extraction, digital monitoring and surveillance systems gather data about workers and their actions and non-actions. Whilst monitoring is not new, the digital nature of the current systems has particular characteristics that will have an influence on how unions should relate to them.

Firstly, the systems are hard to avoid as these systems get embedded into work processes and devices. From facial recognition, to handheld devices, wearables, to sensors across the workspace to the tracking of online activity, and to the processing of information. These have all migrated to a part of our everyday life at work.

Secondly, they are comprehensive - they collect a large amount of data from potentially multiple sources. *Thirdly*, they are instantaneous. The real time data collected gets immediately analysed. *Fourthly*, they are interactive, offering real time communication and feedback.

How is data used?

Employers can use these data to measure workers' productivity and efficiency (however that is defined). They can make elaborate calculations on the likelihood that a worker, for example, will meet their targets, be appreciated by customers, be fast-paced, or are dedicated to the job. Or they can use this to make predictions about the worker: is he or she likely to leave the company soon, fall ill, become slower, or join a union.

What exactly the employers use the data for depends on the *purpose* of the systems they deploy and the data analyses they conduct. In some cases, workers might agree to the extraction of data. For example, workers might support the extraction of data for health and safety purposes to avoid accidents or to measure working

time to avoid stress and burnout. What is important is that the workers know about and have influence over whether data extraction should take place, what the purposes of any data extraction are, how the data is used, and what happens to the data afterwards.

Addendum 2: Why these 7 co-governance themes?

Whereas the co-governance guide's themes and questions in no way are exhaustive, and demand some practice, not least in relation to how to react to managers' responses, they are the most important questions to be asked. Here's why.

Transparency and Procurement Contracts

- To address the fact that many workers/shop stewards express that they do not know what algorithmic systems are in their workplaces, these first questions are key to ensuring transparency.

- Many of these systems are third party systems that the deploying organisation either licenses or buys the rights to use. Depending on the contract between developer/vendor and deployer, the rights to adjust the algorithm(s) can vary. Also, it is pertinent for workers to know who (developer/vendor and/or deployer) has access and control over the data extracted.

Responsibility

- It is clear that the introduction of algorithmic systems in workplaces is influencing managerial responsibilities. Many shop stewards report that it is unclear who they should turn to for answers and responses. Is it the local/central human resources department, or the IT department? Who is doing the impact assessments and governing the effects of the technologies. Workers have a right to know.

Right of redress

- Given the real and potential impacts of algorithmic systems on workers, workers must have the right to challenge actions and decisions based solely or partially on these systems.

Data Protection and Rights

- In line with Data Lifecycle at Work, workers should as a minimum have certain rights to know what data is collected, for what reasons and what happens to the data post extraction.

- However, workers must also have the right to co-determine and edit these data.

Harms and Benefits

- These questions relate very much to probing management for what assessments or audits they have conducted on these algorithmic systems. What remedies management have in place if unintentional or intentional harms are identified?

Adjustments

- This theme relates to theme 1 on transparency and procurement. It asks what rights management and workers have to amend the algorithms if harms or other adversarial impacts have been identified. This is pertinent in the cases where the deploying public service is using 3rd party systems.

Co-governance

- The last theme builds on the others by asking what mechanisms can be put in place so workers and management can co-govern algorithmic systems. Given that the managerial lines of responsibility can be far-removed from the affected workers, it is pertinent that those who have the closest contact to workers are party to the governance of these systems.

- This theme also addresses the question of whether management and workers have the necessary skills and knowledge to successfully co-govern algorithmic systems. There is a dangerous assumption in many governance models that management actually understands the potential impacts of the algorithmic systems they are deploying. Additional training for workers and managers will be needed.