The challenge of the digital transformation in social services for inclusive and equitable metropolises

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We need to ask why social and technological innovation is so crucial today to meet people's needs and move towards more inclusive and equitable metropolises. The answer lies in the digital era in which we live, where digitisation has changed the way we work, relate to one other, learn and participate in society, both for the population as a whole and the part of the population that requires some kind of social support or care.

Digitisation opens up new opportunities for people's development and well-being, but also generates new risks related to the digital divide, which can aggravate and deepen situations of inequality, social exclusion and mental and emotional distress.

Social services in metropolises are now the focus of this debate, as their contribution to solving this equation will be crucial in the coming years.[1] In March 2021, the European Commission stated in its communication, *2030 Digital Compass: the European way for the Digital Decade*, clearly identified the potential of digital transformation in the field of welfare policy, as well as the strengths and weaknesses to consider when establishing priority actions, with a clear commitment to digital transformation as a key building block for European resilience.[2]

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However, social services in cities still have a very long way to go along this path, due to their significant shortcomings, which the COVID-19 health crisis made more visible and evident. While their management and information systems have undergone significant improvements in recent decades, the same cannot be said of the digital transformation in their social intervention and psychosocial accompaniment and support systems for citizens with vulnerabilities. In this area, the social services lag behind public services and much further behind other sectors of society, both public and private, which have profoundly transformed the way they relate to service users to improve their experience and their effectiveness. While countries such as Spain

1. Davide, F.; Gaggioli, A.; Misuraca, G. (2021). *Perspectives for Digital Social Innovation to Reshape the European Welfare Systems*, 13, Emerging Communication: Studies on New Technologies and Practices in Communication. https://www.iospress.com/catalog/books/perspectives-for-digital-social-innovation-to-reshape-the-european-welfare-systems.

2. European Commission (2021). *2030 Digital Compass: the European way for the Digital Decade*. https://ec.europa.eu/info/sites/info/files/communication-digital-compass-2030_en.pdf.

are at the forefront of connectivity and digitisation in some areas of public services, such as finance and social security,[3] the same cannot be said of social services, where digital transformation is still very limited. This lag in the social welfare sector in terms of digitisation affects both publicly and privately managed social services: recent studies show that the use of technology in the third sector lags behind the private sector by at least five years.[4]

The digital transformation in social intervention is today both a necessity and an opportunity for social services in metropolises.[5] It is a necessity because it must interact with a digitised citizenry, with all the changes in culture and mentality this implies: immediacy, self-management, simplification, remote communication, asynchrony and use of the cloud, among others.[6] Although the digital divide has a greater impact on people served by social services, in metropolises such as Barcelona, 91 % of low-income households now have an Internet connection and unconnected households are mostly those made up of people aged over 74. Moreover, the effects of the COVID-19 health crisis have had an impact on all social sectors, causing a change in the digital behaviour among almost all social groups.[7] Even in highly vulnerable groups, such as new arrivals and the homeless, most people have smartphones,[8] while in others, such as people with intellectual disabilities, daily use of smartphones has become an indispensable and effective tool for achieving greater personal autonomy.[9]

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Another reason why social services must board the digital transformation train is the emergence of new forms of social vulnerability linked to the digitisation of society, which require a response from social services. This is what is known as *e-social work*,[10] a new area of specialisation within social work. These are new areas of social intervention, responding to people affected by situations of cyberbullying, the use of technology as a form of control and gender-based violence, situations of domestic tension due to screen addiction, lack of knowledge of cybersecurity and the risk of falling for digital scams or phishing and stalking by a malicious anonymous person with whom the victim has no personal connection. This requires

3. European Commission (2021). *Digital Economy and Society Index (DESI)*. https://digital-strategy.ec.europa.eu/en/policies/desi.

4. Fundación Telefónica (2022). *Libro blanco de la transformación digital del tercer sector*. https://www.fundaciontelefonica.com/cultura-digital/publicaciones/libro-blanco-de-la-transformacion-digital-del-tercer-sector/751/.

5. Position Paper (2021). *Social work and Digitalisation*. https://www.sozialdigital.eu/.

6. BID (2018). *Servicios Sociales para ciudadanos digitales*. https://publications.iadb.org/es/servicios-sociales-para-ciudadanos-digitales-oportunidades-para-america-latina-y-el-caribe.

7. Ajuntament de Barcelona (2021). *La bretxa digital a la ciutat de Barcelona*. https://ajuntament.barcelona.cat/premsa/2021/01/21/barcelona-presenta-linforme-la-bretxa-digital-a-la-ciutat-de-barcelona/

8. Fundació iSocial (2021). *Projecte NIDUS*. https://isocial.cat/nidus/.

9. Fundació iSocial (2022). *Projecte All by myself*. https://isocial.cat/all-by-myself/.

10. Fundació iSocial (2022). *Els serveis socials davant les noves vulnerabilitats causades per la digitalització: l'e-social work*. https://isocial.cat/els-serveis-socials-davant-les-noves-vulnerabilitats-causades-per-la-digitalitzacio-e-social-work/.

the social work sector to adapt and develop new action protocols to meet these emerging vulnerabilities, increase awareness of the problem and find solutions to the various gaps caused by the rise of digital life. This is especially important for many already vulnerable people served by social services, for whom these new digital vulnerabilities can worsen their situation of exclusion, dependency, isolation or violence.

Yet, at the same time, digital transformation requires increasingly agile and creative solutions for social demands and provides a great opportunity for social services in cities. The digital transformation of social intervention provides a great window of opportunity to advance towards more inclusive and equitable metropolises by improving the quality of care from support services and accompaniment for the most vulnerable citizens or those with support needs who, through digitisation, can obtain a better experience from their interaction with social services. This covers aspects such as:

– Access to information.
– Speed and shorter response times.
– Time convenience through remote or asynchronous 24-hour services.
– Reducing unnecessary travel.
– Overcoming barriers caused by social stigma.
– Simplification of administrative procedures.
– Personalisation of services.
– Intensification of personal accompaniment.

– Strengthening preventive work.
– Mobilisation of community support.
– Making certain services cheaper.

The experience of certain public authorities and social service bodies already applying technology to their intervention and organisation in recent years shows its irrefutable value to improving processes and conditions for all those involved in social services, from beneficiaries to professionals and volunteers.[11] For example, linking processes and tools for large-scale quality information collection and advances in data analysis technologies help provide greater and better knowledge of people and their needs, interests and behaviour. As already applied in other economic sectors, this knowledge facilitates the design of social services focused on different beneficiary profiles. Technology is also facilitating significant improvements in the living conditions of people who need assistance for varying reasons, such as disability and old age. Accessible mobile telecare, 3D printing, a variety of support applications and technological advances in accessibility, among other tools, are enabling the transition from dependency to greater autonomy and empowerment among people with these needs.

Similarly, the digital society is also defining a new model of communication and participation between the social services and beneficiaries. Despite the digital divide, many people in situations of vulnerability have mobile device habits of use that facilitate new ways and means of interacting and communicating and open up the possibility of promoting a new model of more fluid relations with social service professionals with more options for active listening and participation.

Obviously, this is not a risk-free path. As in other sectors of society, the digital transformation of social intervention entails ethical, practical and strategic risks and challenges that the social services sector needs to face and manage, such as:

– The dehumanisation of care.
– Increasing feelings of loneliness.
– The imposition of difficult-to-use or inappropriate digital tools.
– Loss of privacy.
– Cybersecurity data risks.
– The use of algorithms that perpetuate or exacerbate discrimination.

The fears often generated by these risks sometimes act as a brake to progress, even producing technophobic attitudes, which are probably more frequent among professionals in the social services sector than in other fields. Resistance to change, present in all sectors, is accompanied in the social services by other difficulties[12] which, when combined, may explain the delay in this sector in boarding the digital transformation train. Such difficulties and barriers include:

11. European Social Network (2020). *Transforming social services through digitalisation*. https://www.esn-eu.org/sites/default/files/2021-03/Digitalisation.pdf.

12. Montalba, Carmen; Russo, Mayra (2021). *Intervención social⬚digital: ¿Hacia qué futuro queremos caminar?* Ed. UVa. https://redib.org/Record/oai_articulo3311330-intervenci%C3%B3n-social-digital-%C2%BFhacia-qu%C3%A9-futuro-queremos-caminar; López-Peláez, Antonio; Marcuello, Chaime (2018). *El trabajo social en la sociedad digital*. Servicios Sociales y Política Social. https://www.serviciossocialesypoliticasocial.com/-34.

- Minimal training and digital empowerment for professional teams.[13]
- Low presence of digital talent and digital profiles in teams.
- Work stress and lack of time for innovation.
- Lack of research and knowledge generation.
- Financial precarity and difficulties in funding innovation.
- Atomisation and complexity of skills.
- Difficulties in providing and contracting technology and digital tools.
- Limitations in scaling existing solutions and managing the changes they entail.
- Lack of adequate infrastructure.
- Little hybridisation and collaborative work with other sectors.

Some of these fears are probably justified, given that things have not always been done well and flawed practice often ends up disproving theories that seemed irrefutable. Some significant requirements to consider to do things better are:

- Person-centred care: as with social intervention, digital tools for social services should also put the beneficiary at their centre. The needs of organisations and social professionals often end up taking precedence over the needs of the citizens targeted by the services.

13. Castillo, Joaquín; Palma, Mariola; Gómez, Luis. **"Abordando el reto de la transformación digital desde el Trabajo Social".** *Documentos de Trabajo Social*, no. 60 (2020). https://dialnet.unirioja.es/servlet/articulo?codigo=7190580.

- Co-design: right from the start, listening to and involving the users, professionals and social service teams who will have to use the digital solutions. Tools designed in an office are doomed to failure.
- UX and UI: making it easy is very difficult, especially in relation to users with deeper limitations and vulnerabilities than the rest of the population. And this can only be achieved by using expert companies to design the user experience (UX) and user interface (UI) that the digital tools must offer in relation to the user profiles they target.
- *First mobile:* most social service users have smartphones, while not so many households have computers. Moreover, travel must be made easier for social workers, especially in rural contexts. Thus, tools should be designed mainly for use on mobile phones.
- *Data is the new oil:* data provision must be one of the main values of the new digital tools. In a sector such as social services, where structured and real-time data is lacking, tools must be created that allow for improved data collection and management.
- Access and equality: solutions that are simple, affordable and accessible to all should be prioritised. In digitisation, the best is often not the most convenient. Tools that are too complicated and cumbersome end up being displaced by simpler, more intuitive solutions.
- Horizontality: digital tools in social services must help end welfare dependency and the sometimes excessive prominence of social workers or educators, while contributing to empowering users and facilitating a more horizontal relationship between professionals and citizens.

– Change management: the most important aspect of digital transformation is not the introduction of new tools, but the changes it all implies in organisations, teams, working methods and how professionals relate to the people they serve. Properly managing these changes, giving them the attention and effort they require, is the key to success in these processes.
– Taking risks: to innovate is to test, experiment and make mistakes. The social service sector has an aversion to risk-taking that has to be overcome in order to move forward in its digital transformation.
– Opportunities in an environment full of barriers and difficulties, it is necessary to know how to take advantage of glimmers of opportunity to move forward. The COVID-19 health crisis helped speed up processes in the social services that would otherwise have taken many years.
– Copying is free: there are many, many successful experiences in other sectors of society, other countries and other disciplines, which social services can learn from and adopt or adapt solutions at no cost.
– Too much criticism: the atomisation of the social service sector is a barrier to its development and improvement, but can be solved by coming together in clusters, collaborative spaces and collective projects.
– Hybridisation: the social services needs a dose of fresh air and to learn from other more advanced sectors, which will only be achieved by working with them, considering their opinions and involving them in its projects.
– Assessment: "Do-goodism" is another handicap for social services. By assuming everything they do is good for society they have been saved from having to prove it. Assessing and obtaining evidence on whether new digital solutions bring the expected improvements is crucial in moving forward.

Despite the obvious difficulties, major transformations are currently taking place within the social service sector and welfare policy. This is partly because the COVID-19 health crisis has accelerated them. This is the case, for example, with remote social care,[14] as a complementary form of in-person social care. An exceptional practice before COVID-19, and one that generated reticence and heated professional debate in the sector, it is now well on the way to becoming normalised.[15] This is, firstly, because there is greater awareness of the disadvantages of online communication, such as limitations to interaction and potential loss of nuance in video calls, significant difficulties in detecting risk factors, lack of knowledge regarding application data use and consents among some users, and risk of encroaching on the boundaries between personal and professional life, etc. Secondly, the importance of making full use of its benefits has been seen, among them time and travel savings, convenience and flexibility. All this has led a large part of the sector to consider the above-mentioned risks as a challenge worth facing when designing and developing tools (chats, video conferences, notifications, exchange of documentation in the cloud, etc.) that facilitate the co-existence of remote and traditional practice.

Some successful experiences from other countries in this field are also helping break the ice. In the Netherlands, for example, the DigiContact[16] video conferencing remote

14. Fundació iSocial (2022). *Riscs i beneficis de la intervenció social en remot*. https://isocial.cat/riscs-i-beneficis-de-la-intervencio-social-en-remot/.

15. Fundació TIC Salut Social; Generalitat de Catalunya (2021). *Estat de la digitalització de les Àrees Bàsiques de Serveis Socials*. https://dixit.gencat.cat/ca/detalls/Article/estat_digitalitzacio_arees_basiques_serveis_socials.

16. **Digicontact, servei d'atenció social remota i immediata durant les 24 h.** https://isocial.cat/digicontact-servei-datencio-social-remota-i-immediata-durant-les-24h/

accompaniment service facilitates highly intensive, 24-hour support for thousands of people in need of long-term care across the country. In Germany, the IPSO[17] psychosocial support service offers peer-to-peer online support and mental health services in more than 20 languages and today has more than 200,000 beneficiaries. And in San Francisco, in the United States, the CIRCLES[18] online service has become a virtual community that energises thousands of professionally supported therapy and peer support groups, having offered over 100,000 hours of psychosocial support to service users in 2020.

Another relevant field of innovation in social services, though still in the exploratory phase, is artificial intelligence. Analysis of big data and constructing algorithms to process it opens up an enormous field full of possibilities for building more intelligent social service systems.[19] Big data and artificial intelligence are today rapidly becoming a significant support for professionals in a wide range of fields, such as commerce, transport, tourism, journalism, agriculture, industry, health, education, justice, security, banking and the environment. And increasingly in the field of personal services as well, most notably social services. Algorithms help professionals understand and draw conclusions regarding complex problems much more quickly, to then suggest a diagnosis or response, manage teams and organisations better and read reports or histories on a large scale.

It is true that professionals see things that an algorithm cannot see, but it is no less true that an algorithm can find patterns the human eye is unable to perceive. So errors are greatly reduced when professionals and algorithms work together. In detecting breast cancer, for instance, studies show that the best doctor has an error rate of 5-6% when interpreting breast scans, while algorithms that also interpret images have an error rate of 6-7%. But with the machine and the professional working together, the margin of error is reduced to only 0.5%.[20]

The main contributions of artificial intelligence to the field of welfare services are summarised in the famous 5Ps, inspired by Leroy Hood:[21] more personalised, more predictive, more proactive, more preventive and more population-based or universal services. And more specifically to the field of social assistance, there is a whole list of possible benefits for social services:

– Greater speed, security, efficiency and objectivity in professional decisions.
– Efficient and quality diagnoses, prescriptions and treatment plans for people.
– Personalisation of interventions, with the option of offering proactive, tailored recommendations.

17. **IPSO, servei internacional de suport psico-social *peer-to-peer***. https://isocial.cat/ipso-servei-internacional-de-suport-psicosocial-peer-to-peer/.

18. **CIRCLES, grups de teràpia psicosocial *online* entre persones que pateixen situacions similars**. https://isocial.cat/circles-grups-de-terapia-psico-social-online-entre-persones-que-pateixen-situacions-similars/.

19. Codina, Toni (2020). **"Per què la intel·ligència artificial transformarà els serveis socials?"**. *Revista de Treball Social*, 219, pp. 85-98. DOI: 10.32061/RTS2020.219.04, https://www.revistarts.com/publicacio/desembre-2020.

20. López de Mántaras, Ramon (2017). **"Diez cosas que la inteligencia artificial puede hacer por ti"**. *El País*, https://elpais.com/elpais/2017/01/24/talento_digital/1485284777_722413.html.

21. Flores, Mauricio; Glusman, Gustavo; Brogaard, Kristin; Price, Nathan D; Hood, Leroy (2013). ***P4 medicine: how systems medicine will transform the healthcare sector and society***. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4204402.
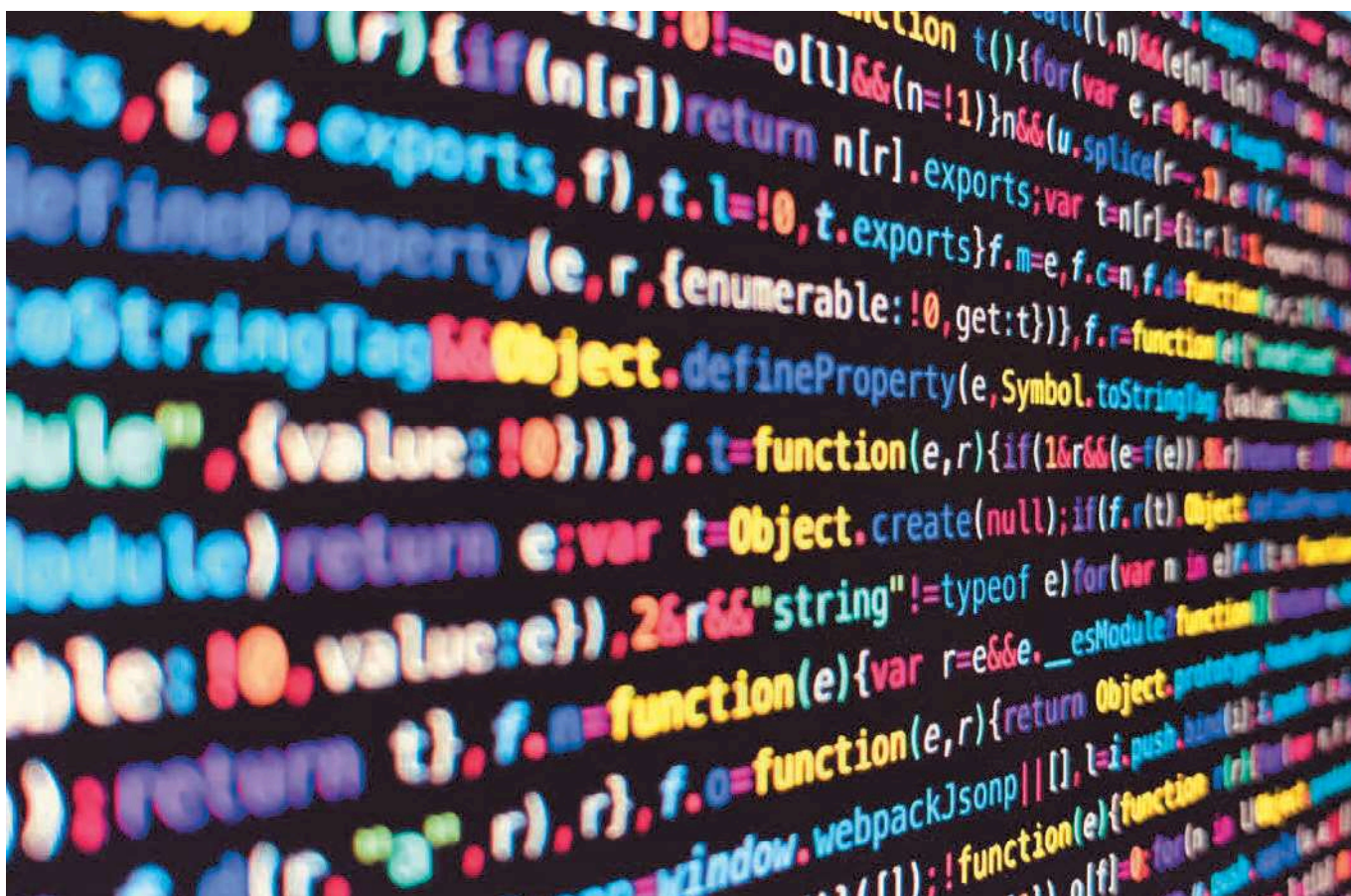
- Professional empowerment and versatility.
- More support for personal autonomy and independent living, and greater residential flexibility and diversity.
- Strengthening preventive policies.
- Strengthening community action for mutual aid, self-organisation and participation.
- Better planning of services and professional teams.
- Greater efficiency and better economic planning.
- Real-time assessment of the social impact of programmes and interventions.

These are advances and improvements that can be very significant for welfare policies and social cohesion in cities. The personalisation, adaptation and anticipation of public services to the needs of citizens are a manifestation of good administration and contribute to public effectiveness and efficiency. These processes also have a positive impact on the legitimacy of public administrations and contribute to improving citizens' trust in and attachment to public authorities. Personalisation and proactive service delivery are now widespread in the private sector, where many companies already engage with their users in a personalised, proactive way. An increasing number of companies are capable of quickly and constantly adapting to changing user needs and personalise services to their preferences based on the analysis of the big data generated by their business. By contrast, only 9% of public services are provided proactively (European Commission, 2020).[22]

22. Escola d'Administració Pública de Catalunya (2021). *Guia per a la personalització dels serveis públics a través de la intel·ligència artificial*. Generalitat de Catalunya (Estudis de recerca digital, 19). https://eapc.gencat.cat/ca/publicacions/colleccions/estudis_de_recerca_digitals/19.-guia-per-a-la-personalitzacio-dels-serveis-publics-a-

According to experts,[23] in social services it is a matter of using technology in much the same way as other sectors have done to leverage the improvements that the social service system needs: increasing personalisation of interventions; economic efficiency; organisational integration; collaborative dynamics; preventative impact; social legitimisation; ethical quality; democratic governance and the political universalisation of social services.

Some European cities, such as Barcelona, currently have a well-established roadmap to move in this direction, having developed innovative artificial intelligence tools for municipal social services in recent years, such as the Demands, Problems, Resources (DPR) system. [24] With the 2021-2023 Social Innovation Government Measurement,[25] Barcelona City Council promotes various new technological solutions that will facilitate decisive progress in the digital transformation of the city's social services. Among these, we highlight:

– Tools to improve information for citizens:
  • Online booking of appointments at social service centres.
 • Bots as entry channels to provide information and appointments simply and automatically.

traves-de-la-intelligencia-artificial/index.html.

23. Fantova, Fernando (2020). *Els serveis socials davant la intel·ligència de grans quantitats de dades*. Fundació iSocial, https://isocial.cat/fantova-fernando-els-serveis-socials-davant-la-intelligencia-de-grans-quantitats-de-dades-big-data-barcelona-2020/.

24. Ajuntament de Barcelona (2019). *Intel·ligència col·lectiva als centres de serveis socials*. https://ajuntament.barcelona.cat/mesames/noticia/posem-en-marxa-una-prova-pilot-dintel%C2%B7ligencia-col%C2%B7lectiva-a-tres-centres-de-serveis-socials/.

25. Ajuntament de Barcelona (2021). *Mesura de govern d'innovació social 2021-2023, Transformant la realitat per millorar el benestar dels veïns i veïnes de la ciutat*. https://ajuntament.barcelona.cat/dretssocials/ca/innovacio-social.

– New services to facilitate remote care:
  • New virtual social care offices (OVAS).
  • The citizen's app, to request an appointment, chat with the social worker, and provide information or documents, among other functions.
  • Digital one-stop window (FUD), a single online connection system including video calls.
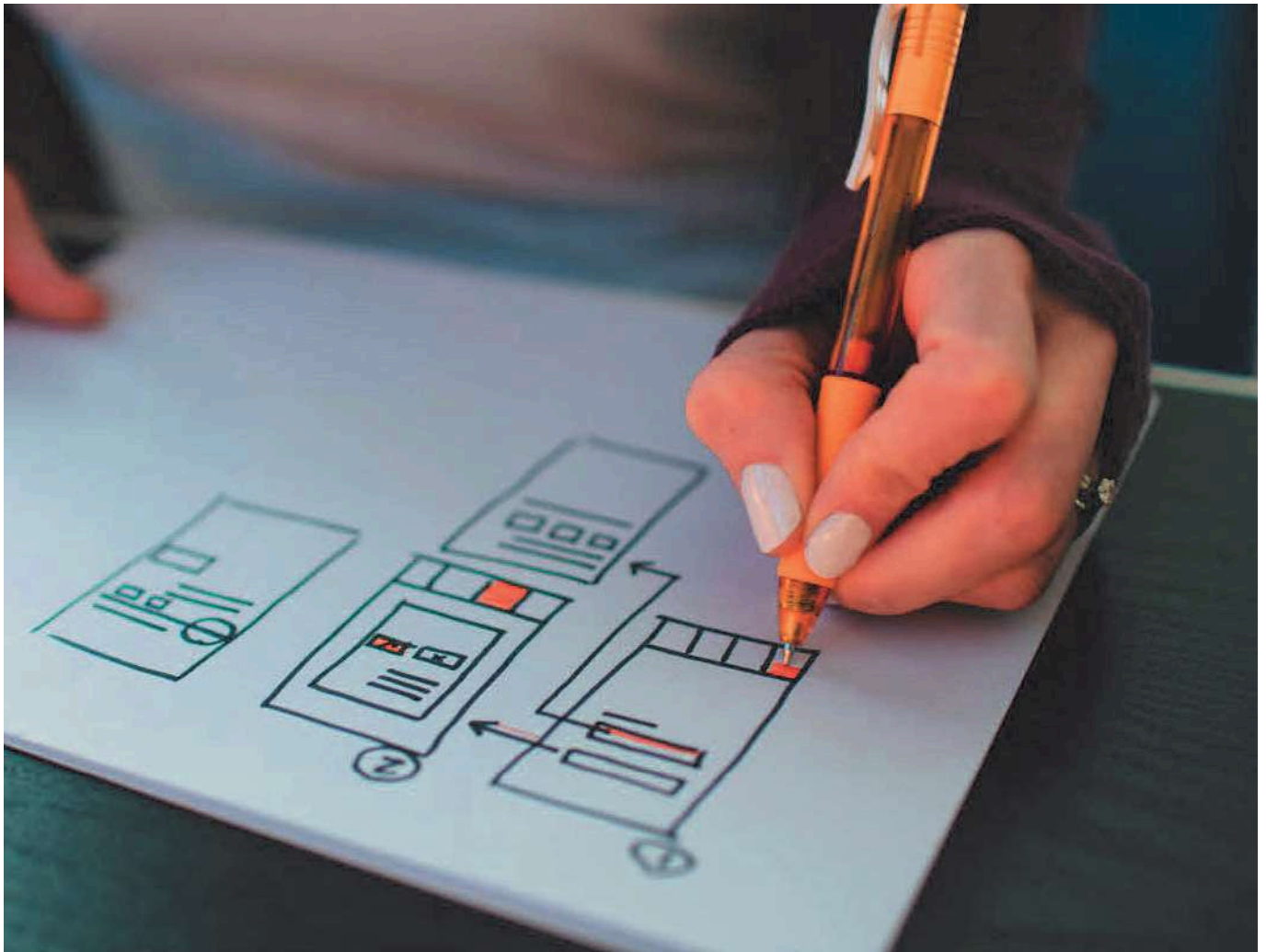
– Big data-based tools:
  • Social big data: integrated social data system, 360° view of people, interoperability with health and education.
  • Single, interoperable social folder, which in the future can also be viewed by citizens and other municipalities.

– Process automation:
  • Automatic system for granting emergency aid, to be tested with 0-16 age-group funds for households with children and teenagers.

– Tools to strengthen community action:
  • Digital tools at the service of collective care, to energise groups, group care for users and community action with local bodies.

This is a path that other large European metropolises, such as Paris, London, Amsterdam, Berlin, Vienna, Stockholm and Helsinki[26] are similarly following in the field of community social services. And the range of initiatives and possibilities is much wider and more diverse for specialised social services, although beyond the scope of this document, and includes robotics, home automation, immersive technologies, 3D printing and gamification, among others.

Today, the digital transformation of social services in cities is a major challenge in better meeting the needs of citizens and moving towards more inclusive and equitable cities. It will help increase efficiency and efficacy in this area of local public services, improve the experience for people who need to use the services, progress towards their universalisation and provide a greater social impact to benefit current and future generations.

26. European Social Network. *European Social Services Awards*. https://essa-eu.org/.

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