Disruptive Pandemic as a Driver towards Digital Coaching in OECD Countries

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Abstract: The current covid-19 pandemic is a disruptive event on various levels. Disruptive event can be defined as a situation where an agent needs to redesign a strategy to overcome the obstacles arising from a fundamental change in an environment. The required change in procedures may open further options to develop best practices towards success. This can occur on societal level, e.g. in education system, on an industry or a firm level. In this communication, we discuss corporate learning and knowledge transfer, which have traditionally taken place in a decision support environment, i.e. by utilising computerised decision support systems in a knowledge society characterised by increasingly complex systems often built and dependent on big data and artificial intelligence to support managers and different decision makers in their specialised areas. Digital coaching is today what decision support systems were in the past. Digital coaching has been proposed as a solution in digitalisation of business organisations, while digitalisation is a solution to keep schools and businesses running. We argue that the crisis can deliver opportunities for digital coaching on three conditions: i) the pandemic is a disruptive event forcing agents take digital steps, while agents have some digital knowledgebase and are surrounded by a supportive infrastructure, ii) it will be severe and long enough to create incentives to develop digital procedures, but iii) together with governmental actions, businesses are not forced to shut down and bankrupt when encountering slumping demand simultaneously with a supply side shock. OECD and its partner countries are clustered and discussed using a multiple correspondence framework with aggregated data on the pandemic and its effects on economies with varying degrees of resilience, on the forced business responses and the scenarios, which are to open or close opportunities of corporate digitalisation.

Keywords: *Digital coaching; disruptive event; digitalisation; pandemic; scenario analysis; correlation analysis.*

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1. Introduction

Covid-19, Ebola, SARS are global threats, being infectious diseases outbreaks. Such outbreaks spread rapidly in cities with a lot of inhabitants due to urbanisation and deforestation, and across countries due to the globalisation and the increased labour and capital movement (World Economic Forum, 2019). The pandemics give rise to thousands of deaths leading to needs to improve the health infrastructure and to respond by new strategies to their disruptive effects.

Coronavirus forces people to social distancing and social containment (Long, 2020). Governments encourage people to self-isolation and the use of digital technologies. Coronavirus leads to school closures and delays worldwide and imposes education digital divide between students who have a stable internet access and the ones who have not. An unstable internet connection makes it impossible for students to respond to tasks online. In some cases, online courses take place by means of smart phones. The same applies to connectivity and corporate education and knowledge transfer in firms.

Figure 1. Pandemic impact on corporate digitalisation

The prevalent pandemic is a disruptive crisis event requiring changes in strategies and procedures of governments as businesses (Kilkki et al., 2018). Effects of pandemic outbreaks depend on their severity. Among other effects, Figure 1 describes the framework under three scenarios from macroeconomic effects, such as a decrease in GDP per capita, the increase of unemployment, slumping demand, to business effects, such as significant commercial and educational disruptions and financial jolts, requirements for

cost cutting, temporary or permanent layoffs and bankruptcies, as well as, and also to digitalisation effects.

In section 2, we focus on digital coaching as part of a corporate digitalisation. In section 3, we analyse selected aggregate variables related to pandemic, its effects, through more-or-less resilient economies, to businesses and corporate digitalisation. Section 4 concludes the paper.

2. Digital Coaching

Digital coaching means technology-based services which are more effective than traditional ones. Digital coaching tools reduce the administrative work and non-productive activities. Several activities are automated, digitalised and the coach acts at the same time as a trainer, mentor, tutor and tester of new tools. The most significant leadership is shown in human resources, public health and psychology. Digital technology consists of platforms with video conferences, emails and algorithms; the digital coaching means a combination between the digital platform and coaching skills.

According to Carlsson (2018, 2019), digital coaching deals with the process of data transformation into information, then into knowledge, process called *digital fusion*. Other three concepts related to digital coaching and data analysis are: (i) *Data fusion* means a collection of geographic, object oriented and multidimensional data in various formats collected from several source. Based on data fusion one can apply on data computational intelligence techniques, artificial intelligence, soft computing, probability reasoning, etc; (ii) *Information fusion* means a collection of analytical tools to summarise data; *Knowledge fusion* means discovering key features of data by applying ontology.

We argue that the effect of the covid-19 on the use and development of digital coaching systems depends on the pre-crisis level of corporate adoption of ICT including artificial intelligence and big data and the level of the digital skills or workers.

3. Clustering the Drivers of Digitalisation in Covid-19 Crisis

OECD countries are among the most developed world countries in terms of GDP, human development index, or digitalisation. We have 16 indicators under analysis on 11 OECD countries and 9 of its partner countries belonging to G20, together with averages of Euro area (also part of OECD), OECD and World.

The indicators of the pandemic infection scenarios (Sc50 refers to a scenario where governmental actions have decreased the infection rate by 50% while in SC80 by 80% from the Future of Humanity institute at Oxford University) for percentage of *Total* population ranges from 6.4% to 20.7% for OECD and from 1.0% to 8.6% for the world and the active infections in the *Peak* in 2020 reach 1.5% in OECD and Euro area, while 0.2-0.3% globally (noting that scenario data is from April 4). The initial *Health* index level in 2019 is clearly higher in OECD (91.5) and Euro area (91.6) than in the world (77.1); The effects on GDP growth in 2020 estimated by OECD in March 2 (OECD, 2020) showing -0.3 percentage point drop from their November estimates for OECD and -0.5 revision for the world (GDP estimates were still conservative then, but they are the latest estimates published by OECD).

The resilience index measures the ability of countries to absorb shocks related to economy, supply chains and natural hazards. The index is 81 for OECD, 77.6 for Euro area and 50 globally; also, macroeconomic stability can be seen as a buffer on shocks to the economy. Businesses can absorb shocks based on how dynamic they are and how flexible the labour markets are. The OECD and Euro area business are again in much better position than the other world, which is seen also in their competitiveness (GCI 4.0). The level of digitalisation measured by ICT adoption, digital skills of population and the Stanford University's new composite index of artificial intelligence show corporations in OECD and Euro clearly more digitalised than the world.

Multiple correspondence analysis is used to plot countries with the 16 indicator classes in Figure 1 showing their relatedness to each other. In top-right Quadrant 1 Russia and China are related to low total and peak infection levels and medium digitalisation and business dynamism. Even with their low (China) and medium (Russia) resilience, they are expected to have very high GDP growth in 2020 compared to OECD and world averages. Indonesia, India, Mexico and South Africa are grouped together, not far from Quadrant 2's Argentina and the World on average related to medium severity of the pandemic, low to medium resilience and low ICT and AI levels.

In bottom-left Quadrant 3, United States, United Kingdom, Australia, Canada and Germany are related to very high resilience and macroeconomic stability, business competitiveness and dynamism. Specifically, the USA, UK and Germany are expected to be hit very hard by the pandemic and GDP decline, but they are the most resilient and dynamic to recover from quickly, while they have digitalisation levels. Euro area and

Figure 1. MCA plot on regions and indicators¹

We took a macro level view on the current pandemic and its effects on economies, businesses and their digitalisation utilising multiple

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correspondence analysis on categorised data of selected G20 countries and OECD. The results suggest that Russia and China are not undergoing a severe pandemic (although the used scenarios are still based on limited data at the time of writing this article in April 2020). Their digitalisation levels are at medium level together with many OECD's partner countries and their corporate potential is seen limited in developing their digital coaching systems and strategies during the crisis. Limited potential is suspected for South Korea, Japan and also Italy. The USA, UK and Germany are hit hard, they have very high digitalisation and AI adoption and thus have a potential for further digitalisation although the pandemic may not be long enough and their resilience is so high that their businesses may not have great incentives to changes in their digital procedures in general. Euro area countries on average seem to have the highest potential for digital leaps as their crises may be prolonged also by government actions, while the level of ICT and AI adoption with digital skills are high to allow permanent changes and development of their digital strategies. Future research with accumulated data should focus on the mechanics of the impact from a pandemic to economy and business and their digitalisation using more specific indicators driving digital coaching.

References

- Carlsson, C. (2018). Decision analytics – Key to digitalization, *Information Sciences*, 460(461), 424-438. <https://doi.org/10.1016/j.ins.2017.08.087>
- Carlsson, C. (2019). Digital coaching to make fuzzy real option methods viable for investment decision methods viable for investment decisions. IEEE Conf. on Fuzzy Systems. New Orleans, USA. <https://doi.org/10.1109/fuzz-ieee.2019.8858921>
- FM Global Resilience Index (2020). <https://www.fmglobal.com/research-and-resources/tools-and-resources/resilienceindex/explore-the-data/>
- Global AI Vibrancy Tool. (2019). <http://vibrancy.aiindex.org/>
- Kilkkä, K., Mäntylä, M., Karhu, K., Hämmäinen, H., & Ailisto, H. (2018). A disruption framework. *Technological Forecasting and Social Change*, 129, 275-284. <https://doi.org/10.1016/j.techfore.2017.09.034>
- Long, N. (2020). From social distancing to social containment: reimagining sociality for the coronavirus pandemic. http://eprints.lse.ac.uk/103801/1/From_Social_Distancing_to_Social_Containment_v_2.2_3.pdf
- Mitigation Calculator. (2020). Covid-19 forecasting. <http://epidemicforecasting.org/>

- OECD (2020, March 02): *OECD Interim Economic Assessment Coronavirus: The world economy at risk*. OECD Publishing. <https://doi.org/10.1787/7969896b-en>
- Perrault, R., Shoham, Y., Brynjolfsson, E., Clark, J., Etchemendy, J., Grosz, B., Lyons, T., Manyika, J., Niebles, J. C., & Mishra, S. (2019). *The AI index 2019 annual report*. Stanford University.
https://hai.stanford.edu/sites/default/files/ai_index_2019_report.pdf
- Schwab, K (2019). *The global competitiveness report*. World Economic Forum.
http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- World Economic Forum. (2019). *Outbreak readiness and business impact protecting lives and livelihoods across the global economy. White Paper*. World Economic Forum.
<https://www.weforum.org/whitepapers/outbreak-readiness-and-business-impact-protecting-lives-and-livelihoods-across-the-global-economy>