



MARCHE &
organisations

Call for Papers - Thematic Issue

Impact of Digital technologies on Health Systems

Guest Editor (s): Audrey Bécuwe, Associate Professor, CREOP EA-4332, Université de Limoges, Clémence Thébaut, Associate Professor, OMIJ, Université de Limoges

Calendar :

- **April 30, 2019:** deadline for submission of abstracts
- **September 30, 2019:** final acceptance

Please send abstracts and articles to:

- audrey.becuwe@unilim.fr and clemence.thebaut@unilim.fr

Market & Organizations in Cairn:

<https://www.cairn.info/revue-marche-et-organisations.htm>

Digital technologies open up new prospects in many applied fields, through the combination of various tools and resources such as:

- Development of big databases which encompass information on economic transactions and individual pathways, resulting from trades' dematerialization and diffusion of Internet of the thing;
- Methods in computer science to analyze these massive data like data mining;
- Natural language processing with which it is possible (1) to extract information from non-structured data, (2) to simplify usability of tools using these massive data (ex. chatbot).

Digital technologies may then contribute both to produce new kind of information and new use of these information in decision making.

The objective of this Call for Papers is to study impact of such disruptive technologies on Health System, where Health System could be defined as “*all activities whose primary purpose is to promote, restore, and maintain health*” (WHO, 2000). More precisely, the aim is to consider how they can induce evolution of communication methods and evolution of type of information exchanged between economic agents, within health sector, nursing homes and social centers, between physicians, patients, associations, national health insurers, drug companies, etc.

Digital Health define as “the cultural transformation of how disruptive technologies that provide digital and objective data accessible to both caregivers and patients leads to an equal level doctor-patient relationship with shared decision-making and the democratization of care”, (cited by Mesko and alii, 2017). In that regard, it is needed to distinguish:

- Telemedecine (consultations between remote client and healthcare provider, remote monitoring of client health or diagnostic data by provider, transmission of medical data to healthcare provider, etc.)
- Mobile Health (m-Health) (wearable biometric sensors associated with monitoring tools via mobile applications) (Steinhubl, 2016)
- Information system within health care organizations (Grosjean et al., 2007)
- Surgical robots
- Big data (Barillot et al., 2017).

Three level of analysis could be considered and each one raises specific, yet complementary issues:

- At a macro level - Which are the relevant criteria to assess efficiency of these technologies? To what extent these technologies may reduce inequalities in access to health care providers across geographical area? Etc.
- At a meso level – What is the impact of these technologies on cooperative framework between economic agents within specific geographical area? What is their impact on multi-actor decision making? Etc.
- At a micro level – several thematic could be explored:
 - o A strategic dimension: What are the conditions for a disruptive innovation to be considered as a strategic priorities for organizations (hospitals or health care centers) (Houy, 2014) ? Beyond disruptive innovation theory (Christensen, 1997, cité par Claveranne et alii.), which theoretical framework could be used to understand such innovative process in the health care sector? How could we measure the value created by these technologies and how should it be distributed between stakeholder? How new form of knowledge sharing could be integrated to knowledge management system? What is the economic model for virtual patients communities such as PatientsLikeMe (cited by Laubie, 2011) or Carenity?, Etc.
 - o An organizational dimension: How barriers to innovations could be overcome (Attewell (1992, Tanriverdi, Iacono (1999)? What are the various processes for economic agents to adopt innovative technology? And which dynamics of power

are underlying the use of innovative technology? Moreover, how projects implying artificial intelligence could specifically be developed within hospital and health care organizations (Heudel, 2017)? Etc.

- A human dimension: Which are the collective representations on innovative digital technologies? To what extent individual's competences and roles are shaped around them (Esterle, 2011)? Which are the new jobs rising and what is the perimeter of intermediation functions? How digital technologies could have an impact on Patient/Physician relationships (Broom, 2005, Menvielle et alii, 2016)? To what extent could they participate to the empowerment of patients (Calvillo et alii., 2013)? How could the actors coordinate themselves (Franchistéguy-Couloume I., 2017)? What are the ethical issues raised by big data in health sectors (Béranger, 2017)?

References:

Attewell, P., 1992, « Technology diffusion and organizational learning: The case of business computing », *Organization Science*, vol. 3, p. 1-19.

Artificial Intelligence and Life in 2030, 2016, *Standing Committee, Barbara J. Grosz (Chair)*, Stanford University, September 9.

Barillot E., Hupé P., 2017, « Les Big data en oncologie : de la recherche fondamentale à des applications au bénéfice du patient », *Annales des Mines - Réalités industrielles* 2017/1, février, p. 15-18.

Benhamou S., Janin L. (rapporteurs), 2018, Intelligence artificielle et travail, *France Stratégie*.

Béranger J., « Chapitre 1. De l'étude des risques à la traduction des enjeux éthiques des Big Data en santé », *Journal international de bioéthique et d'éthique des sciences*, 2017/3 (Vol. 28), p. 15-25.

Broom A., 2005, « Virtually Healthy : The Impact of Internet Use on Disease Experience and the Doctor-Patient Relationship », *Qualitative Health Research*, vol. 15, no. 3.

Calvillo J., Roman I., Roa LM, 2013, « How technology is empowering patients? A literature review », *Health Expectations*, 18, 643-652.

Christensen C.M., 1997, « The innovator's dilemma : when new technologies cause great firms to fail », *Harvard Business School Press*, Boston, Mass.

Claveranne J.P., Pascal C., Mick S., 2013, « Editorial : L'innovation ou l'apocalypse », *Management & Avenir Santé*, 2013/1, n°1, p. 5-10.

Esterle L., Mathieu-Fritz A., Espinoza P., 2011, « L'impact des consultations à distance sur les pratiques médicales. Vers un nouveau métier de médecin ? », *Revue française des affaires Sociales*, 2011/2, p. 63-79.

Franchistéguy-Couloume I., 2017, « La e-santé : menaces ou opportunités pour les organisations de santé ? », *Journal de gestion et d'économie médicales*, 2017/4 (Vol. 35), p. 135-136.

Grosjean S., Bonneville L., 2007, « Logiques d'implantation des TIC dans le secteur de la santé », *Revue française de gestion*, 2007/3, 172, p. 145-157.

Heudel P.E., Durand T., Blay J.Y., 2017, « Projets d'intelligence artificielle à l'échelle d'un établissement de santé : l'exemple du centre Léon Bérard », *Revue française des affaires sociales*, 2017/4, p. 133-140.

Houy T., 2014, « L'innovation stratégique sur un marché régulé. Le cas des technologies pour la santé », *Revue française de gestion*, 2014/6, 243, p. 13-31.

Laubie R., 2011, Le patient connecté ou les métamorphoses de la santé, *L'Expansion Management Review*, 2011/4, n°143, p. 24-31.

Menvielle L., Menvielle W., Audrain-Pontevia A-F., 2016, « Effets de la fréquence d'utilisation des communautés virtuelles de patients sur la relation patients-médecins », *Journal de gestion et d'économie médicales*, 2016/8, Vol. 34, p. 431-452.

Meskó B., Drobni Z., Bényei E., Gergely B., Györffy Z., 2017, « Digital health is a cultural transformation of traditional healthcare », *Mhealth*, 3: 38.

WHO, 2016, *From Innovation to Implementation : eHealth in the WHO European Region*. Copenhagen: World Health Organisation.

Steinhubl SR, Muse ED, Topol EJ., 2015, « The emerging field of mobile health ». *Science translational medicine*. 2015;7(283):283rv3. doi:10.1126/scitranslmed.aaa3487.