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Why health professionals should be interested in digital technology?

According to a recent French study*, 79% of all people in France are likely to incorporate connected devices into their health care, because they ensure better medical monitoring. Additionally, 73% believe that they encourage better dialog with a professional, and 3 in 4 surveyed say they are willing to share the data collected with health professionals. This is a trend that the b<>com Institute of Research and Technology has been involved in for some time, offering technological solutions for improving patient care and appointing Emmanuel Cordonnier to lead its e-health division.

Since launching in 2013, b<>com's expertise in hypermedia and networks has been applied to great effect in the field of e-health. This is because combining network innovations and advances in the field of visualization are key to telemedicine. Images are a major component of the medical information shared between health professionals when caring for a patient.

How can the unique needs of health care solutions, in terms of their safety, quality, ergonomics, and security, be taken into account? What is the best approach to medical applications that are expanding to include monitoring, prevention, social relations, and well-being?

With two laboratories dedicated to e-health, b<>com aims to:

- **Optimize data exchanges between health professionals**

Web technologies make it easier for health professionals to collaborate through faster, more reliable exchanges accessible on the latest mobile devices. 5G will make it possible to meet these new challenges which include the continuous connection of mobile objects used for medical purposes: bracelets, smartphones, tablets, etc.

"Today, the most important tool for improving the quality of care lies in communication between health professionals on one hand and between health professionals and patients on the other. The term "patient-actor" is being used more, and that's who the communication systems must be designed around," **explains Emmanuel Cordonnier, Director of e-health at b<>com.**

One of the challenges faced by the IRT is facilitating the communication of medical data (images) while offering each health professional sufficient control over the tools. For this reason, b<>com's experts, including doctors, researchers, and engineers, are innovating to design a distributed information system.

- **Improve surgical performance**

Likewise, the hypermedia expertise developed by b<>com now allows it to guide surgeons in previewing their procedures in virtual reality. In the operating room, the IRT is working on practitioner assistance during the operation through augmented reality, which can be used to superimpose 3D images of organs onto actual images.



Augmented reality for the operating room

This is possible for introducing prosthetics (which can be personalized with 3D printers), radiation therapy, and tumor biopsy.

These applications, which use medical data represented in multiple forms, already exist, but are reserved for major operations. The goal is to optimize the technologies and use mass-market sensors in order to make the solutions more accessible to professionals.

Emmanuel Cordonnier appointed b<>com's Director of e-health



A recognized expert in the field of telemedicine and medical data transfers, Emmanuel Cordonnier is an entrepreneur and researcher who went from the world of IT service companies to the world of research, then to business creation. He is the co-founder of ETIAM, which he has been President of for 18 years. This small business specializing in medical image communication became the European leader in telemedicine solutions, and he has led it for 18 years.

Emmanuel participated in the creation of several global standards, such as the extension of the DICOM standard to the Web and video, clinical document sharing, and more.

*"In the 1980s, Emmanuel Cordonnier was already creating "imaging" business lines within an IT services company, specializing in communicating 3D imaging. His expertise as both a research and an entrepreneur is totally in step with our strategy: Going beyond research and putting innovative products on the market," said **Bertrand Guilbaud, CEO of b<>com.***

* [Survey by the polling institute PHR/IFOP](#), January 2015. (in French)

About b<>com

The b<>com Institute of Research & Technology is dedicated to boost development and marketing of tools, products and services that improve everyday's life, thanks to research and innovation in digital technologies. In concrete terms, b<>com is innovating at the highest level in the areas of hypermedia (ultra high definition images, 3D, intelligent content, virtual and augmented reality, etc.), smarter and faster networks and e-health as the first area of application.

It is based in Rennes and was launched at the end of 2012. It is supported by French government, Brittany Region and Cities Councils (Rennes, Lannion and Brest).

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