HealthOnPhone Newsletter, November 2013

Health Devices. . . .

- either cover each a wide spectrum of parameters, while being directly connected to the Internet, or focus on a limited set while collectively using a nearby mobile telephone to communicate the results elsewhere.

- are usually not networked. Attempts by e.g. Microsoft and Google to define a common communication format have been little successful. Specialized networks come from a single manufacturer, for instance in Fashion.

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Comoray applies a modular software architecture to support new connectivity efforts.

There are many variations in non-invasive measuring to obtain health information from a single human body. Such variations can be roughly divided into three categories:

Physical mechanisms. Examples from the abundance in the physical world suggest a plethora of readily available sensing mechanisms. The most popular would be optics, this being widely supported for different reasons. However, electrical sensing and spectral gas analysis are increasingly considered too. Such mechanisms come out in distinctive devices, each with their own particular functional limitations.

Bodily Target. Several parts of the body allow for methods to 'read' the body's health. Every different approach requires a different transmission medium, creating different types and distortion levels of the signal while passing between body and sensor. These have to be characterized in models of the signal source (body) and the transmission channel (skin tissue), in order to clear the path towards the actual reading.

Signal Processing. And then at the very core of the system resides the processing of the obtained signals. Once noise has been removed, the signal shape can be used to quantify indirect results such as blood pressure and parts appearing only in combination such as oxygen and acidity levels.

"Flexible electronics offer the opportunity to weave computation, communication and storage into the fabric of the every clothing that we wear, therefore, creating intelligent fabric." (Roozbeh Jafari, Medical Embedded Systems, 2006)

OxiSense is composed of a physical, a physiological and an algorithmic layer providing the flexibility to offer various distributed health systems.

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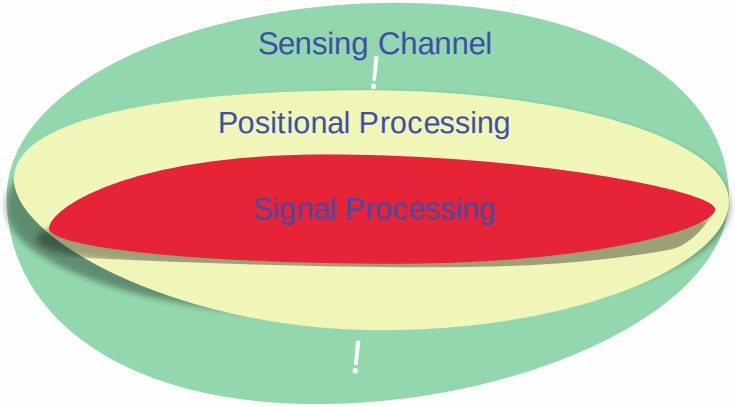
The modular architecture has benefits that enter the picture not only from the point of software engineering, e.g. maintenance, but additional advantage comes forth from the applied toolbox: a collection of small pieces of software with a limited set of internal interfaces.

ComorSense consists of tools in a box that can be assembled into a customized App.



Flexibility. Families of Health Devices can be assembled on the basis of sensor requirements. It merely requires a selection from the available tools, based on the internal data interfaces.

Reliability. As tools are re-used in the different Health Devices, system reliability will increase by automated testing from a single health data repository.

Extendibility. New requirements can be answered by simply adding new tools to the selection and configuring them into the standardized system test.

“We decided to become a software company deeply tied into the sensors on smartphones. Hardware is very hard.” (Lauren Goode, Why Wearables Aren’t Working (Yet?), April 19, 2014)

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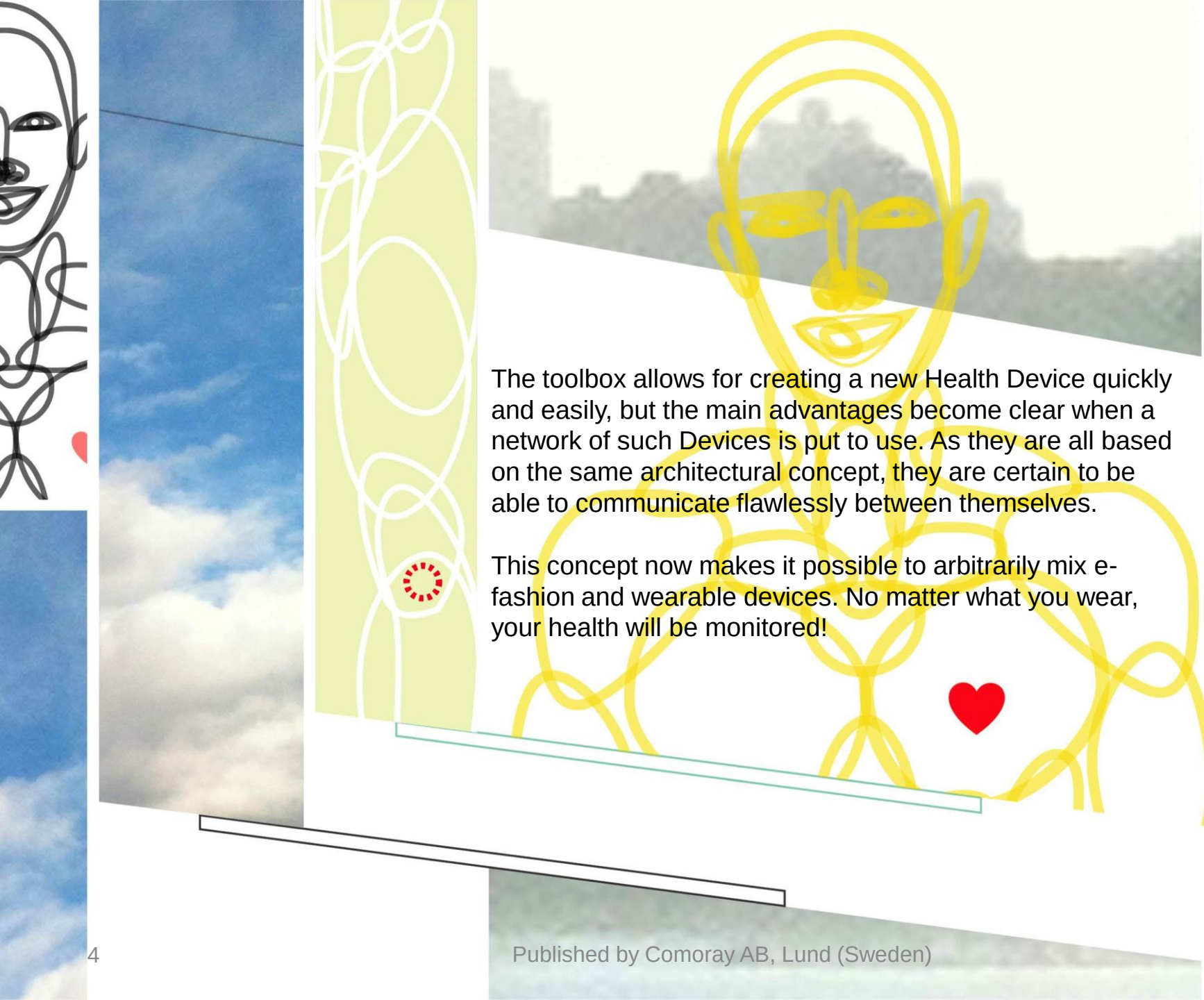

The toolbox allows for creating a new Health Device quickly and easily, but the main advantages become clear when a network of such Devices is put to use. As they are all based on the same architectural concept, they are certain to be able to communicate flawlessly between themselves.

This concept now makes it possible to arbitrarily mix e-fashion and wearable devices. No matter what you wear, your health will be monitored!

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