

The Almende Collective Human-Agent Paradigm (CHAP) applies the principles of self-organisation to the current technological scenario where devices are no longer passive machines operated by humans, but active computational components cooperating with humans

The Rise of JavaScript

In the near future, web applications and JavaScript will become more and more popular due to their flexibility, ubiquity, and fast development/deployment cycle.

Java will slowly decrease in popularity due to its complexity, its slow development cycle, and the limitations of single inheritance OOP, which is a bad fit for real world objects.

In the far future, JavaScript will be eventually replaced by another language. Important characteristics for this language are innovative solutions for concurrency, parallelization, and networking.



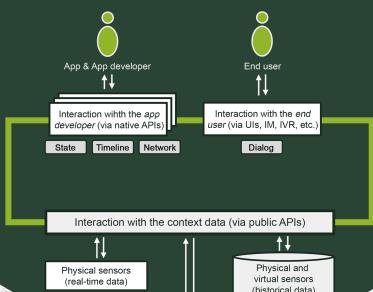
almende
ORGANIZING NETWORKS

Almende is a Dutch ICT research company developing technological solutions to improve people's life



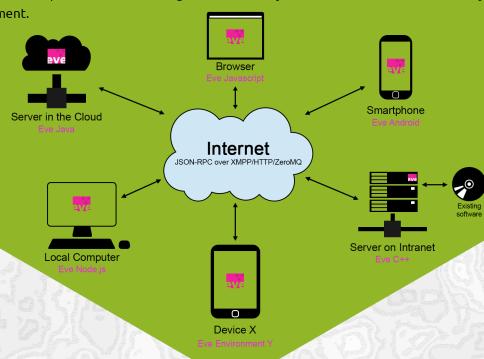
Software engineering for the Internet of Things

We expect that JSON REST APIs and Micro Service Architectures will flourish. More autonomously acting software and devices will bring practical AI in all parts of our daily life. The importance of simple, small, well-defined APIs grows (both for web APIs as well as APIs of libraries/module).



Agent-based Hybrid Networks

Agents are suited to represent the heterogeneous, highly distributed, and dynamic systems which are ubiquitous in nowadays world. In the future, there will be yet more genuine agent-based software engineering in a scenario in which humans and software agents should perform similar roles, thus becoming almost interchangeable within the system. Novel network communication protocols will emerge to efficiently interact with devices in a dynamic environment.



VISION

Future software engineering will have to answer a key question: *how to exploit the potential of a future scenario in which humans and software agents increase the amount and extent of their interactions?*

Almende propose the Collective Human-Agent Paradigm (CHAP) whose main goal is to apply the principles of self-organization to hybrid human/software collectives. CHAP does not impose architectural constraints but it rather defines a number of generic requirements meant to serve as guidelines to implement the software tools that CHAP architectures contain.

CHAP software is inherently suitable to be deployed in heterogeneous distributed platforms, and it aims at developing genuine adaptive emergent systems.

Existing CHAP software includes tools for data visualization, multi-agent systems, and machine learning.