- Code4Prosperity -

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Title: Code4Prosperity, free and open software development community for a sustainable prosperity

Abstract
Code4Prosperity (C4P) is a Weconomics Foundation (WF) IT project to improve the productivity of information workers and redistribute the surplus time for an affordable and eventually sustainable prosperity. C4P is a project to start a worldwide developer's community for free and open source application developers on level 6 in the Weconet Data Ecosystem (see figure 1) C4P developers believe in sharing economy and the organization of a sustainable prosperity. Application developers and Weconomics partners (account managers, fellows, domain leaders, network leaders etc.), will work together to improve the productivity of information workers; not only within the borders of bureaucratic institutes or nontransparent markets, but also with new organizations that work with new organization forms based on concepts such as hybrid organizing.

Introduction
We live in a time where physical production (and consumption), more and more is replaced by digital production and consumption, especially by the internet. We live in a time where information and knowledge are the most important production factors. But most of the organization forms we organize our work with were designed in the early twentieth century. They are especially suitable for physical production in large numbers and in a relatively 'quiet' and local market. Traditionally we organize our work within companies (make), or we organize it by markets (buy). Companies are scalable, but no so flexible, and markets are flexible, but often not so scalable. In the context of the twenty-first century we need hybrid organization forms that are scalable and flexible at the same time. We have the internet (means), that is scalable and we have humans (men), who are flexible. We need new organization forms that combine or cross these two in a better, more effective and productive way.

Our prosperity is at stake
We live in a time where our prosperity is at stake. The costs of our prosperity are rising, whilst our productivity (and especially the productivity of information workers), is not increasing enough to keep up with the rising costs for education, healthcare, safety etc. Despite large investments in IT (but also in HR- and management concepts), productivity doesn't grow enough. In the literature this is called the productivity paradox. The productivity paradox was analyzed and popularized in a widely cited article by Erik Brynjolfsson[1], who noted the apparent contradiction between the remarkable advances in computer power and software development and the relatively slow growth of productivity at the macroeconomic level, but also on the level of individual firms and many specific applications. The concept is sometimes referred to as the Solow paradox in reference to Robert Solow's 1987 phrase: 'You can see the computer age everywhere but in the productivity statistics.'[2] The paradox has been defined as the discrepancy between measures of investment in information technology and measures of output at the national level. One of the main reasons the productivity of information workers doesn't grow enough since the seventies, is not a technical problem but an organizational problem. We organize the work of information workers with the wrong organizing forms that don't use the full potential of the internet: we organize our work mostly in vertical companies and non-transparent markets, while horizontal or hybrid organizing is better to improve our productivity. We are moving from an old society (industrial revolution: based on more prosperity), to a new society (based on a sustainable society). To facilitate this transition, we will also move form a company centered software architecture to communitysoftware

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[1] Brynjolfsson, Erik: 'The productivity paradox of information technology' (1993).
[2] Robert Solow, "We'd better watch out", New York Times Book Review, (July 12, 1987)

or network economy centered architecture and Weconet plays an important role in this transition.

Weconet

Weconet represents Weconomics Network, a kind of IT ecosystem. C4P is an initiative of the WF. C4P is a community for free and open source application developers. This community will develop applications that can be connected to Weconet[3] and convert data into information. WECONET is an organ within the WF and responsible for rearranging the internet (not so much the technical internet, but the way data is organized). WECONET maintains a kind of blueprint with which software developers can develop applications. WECONET can be compared with the International Standard Organization (ISO) or the Free Software Foundation. Through a democratic process, users can influence the development of WECONET. The General Assembly (representing users) is ultimately, the 'highest' power within Weconomics.

WECONET as a WF organ develops and maintains an ontology and taxonomy for maintaining basic data and a description for the execution of transactions through a common data utility. Using the blueprint, developers can build community software. For example: a portal to search and book a course is connected to the Weconomics infrastructure.

Weconet as an infrastructure is similar to the power supply grid: common data (attributes and facts from men and means), are accessible in a common data utility. You connect your device (with C4P applications) via a data connector to this common data utility and you can share data to convert into information and share information to convert into knowledge and convert knowledge into wisdom. Software and IT businesses can use Weconet for their own applications and services. Weconet is a kind of 'blueprint'. With this blue print or building plan a contractor (software developer), can build a house (community software).

The Weconomics core infrastructure (level 1) has the same ontology and taxonomy for all domains (for example the attribute data of birth for humans an price for means). Users only need one login code, providers maintain core data in one database and customers can use their own portal to search and book for example courses, vacancies or other instruments. Cooperation and similarities are organized in the common (core infrastructure, global), while competition and differences are organized on portal level (application, local).
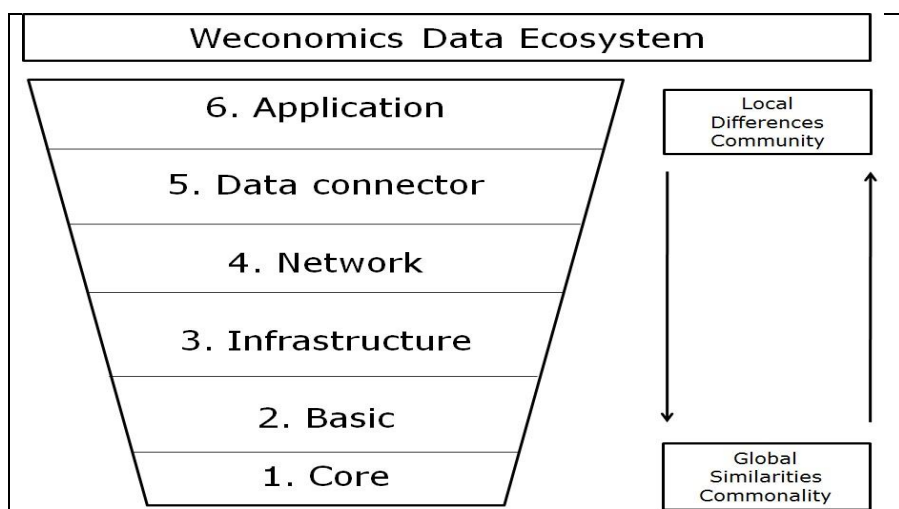

Figure 1: Weconomics data ecosystem, see also chapter 3 in book: Weconomics in practice (Dutch only).

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[3] Weconet: Weconomics Internet, Weconomics network architecture with organization form, fundamentals ontology and taxonomy.

Examples of applications that can be developed by C4P are:
- a portal to search for courses or vacancies
- an application to book events and connects to your agenda and e-mail system
- an application to organize expat processes in a supra shared service center

Hybrid organizing
The basis of C4P is hybrid organizing, a new organization form, a cross, between make and buy, between do it yourself and contracting out, between the institute and the market. Hybrid organizing has a new unit of analyzing and design. If you organize your work via the institute, the unity of thinking is the institute. The institute borders are literally the border of your thinking (also thinking and designing in relation to software development). With the market, the market transaction is the unity of thinking and border for your IT architecture. The unity of thinking in hybrid organizing is organizing capability. Organizing capability is the meaningful connection between the two smallest organization building blocks: men and means (human and tools). You and your laptop, you have and therefore you are organizing capability. From this smallest building stone, we can build any organization by connecting and disorganize by disconnecting. The question is: why are we going to hybridize work organizations? What is hybrid organizing and where does it work and where not? What are the fundamentals of hybrid organizing, how do hybrid organizations look like? How do hybrid organizations work and why is working smart together so important within the hybrid research field? And finally what will be the influence of hybrid organizing on IT architecture and application development in the context of the twenty-first century? The feasibility study Code4Prospertiy and the whitepaper on hybrid organizing will answer these questions.

Why the work of information workers?
In the twentieth century the western world 'proved' it can produce prosperity. But this prosperity is not really affordable (without more debts or printing money) and not sustainable, if we look at the 2008-crisis. To produce a sustainable prosperity we have to improve our digital production and consumption processes, especially the productivity of information workers. Probably more than half of the working people in modern and developed countries spend more than half of their time[4] processing data and producing information (share, communicate, process transactions etcetera). Because processing information is the most import process in organizing the work for a lot a people, information workers, and more specifically the productivity of information workers, needs special attention when we look at new organization forms.

Despite the enormous capital investments, the productivity of information workers, probably[5], only doubled in nearly fifty years. The productivity of the factory worker increased with a factor 50 in 150 years. In The Netherlands, for example, only 5% of the population produces enough food for everyone. Why are farmers and factory workers so productive? Because the work of a farmer is organized on a farm and the work of a factory worker is organized in a factory. The kind of work most people do in developed countries world changed (from physical to digital production, from factory to information worker), but our organization forms and underlying theories hardly adapted to the new situation.

Work of information workers is, in many cases and aspects, still organized with the same organization thinking, forms, traditional organization theories and IT architecture that originated in the nineteenth century. The kind of work most people do in developed coun-

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[4] A practical definition of an information worker can be: if you are more than half of your working day behind a (computer) screen, or communication (telephone or face to face), you are an information worker.
[5] We do not know for sure how the productivity of information workers develops. It is difficult to measure the productivity of a knowledge worker. CBS started in 2007 with new measurements in this specific field, see: 'De Nederlandse groeirekeningen 2007, CBS (2008), but in the words of Peter Drucker: 'However, it is certain that the emergence as *key questions* of the knowledge worker and of the knowledge-worker's productivity will, within a few decades, bring about fundamental changes in the very structure and nature of the economic system.' (California Management Review Vol. 41, No. 2 Winter 1999, page 94).

tries and the theories and forms we organize it with don't align enough. This is the main reason why the WF initiated the HARP research program[6] in 2013. It is a program to explore and analyze, together with different domains, new organization forms, IT architecture and organizations that are capable of improving the productivity of information workers. If we can improve the productivity of information workers, the surplus time can be used to perform task governments rebound to citizen. With the surplus time, when allocated well, we can improve and lower the costs for our welfare and prosperity. The C4P community will also start with a analyses or feasibility study as part of HARP.

Further information
If you are interested in joining Code4Prosperity, see de [Weconomics Foundation](#) website for further information or contact the project initiator: [Paul Bessems](#)

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[6] HARP: Hybrid Organizing Analysis Research Program.