



Social media and social companies: A vision on new requirements for future software in the networked economy¹



The Internet is changing the way we organize work. It is shifting the requirements for what we call the 'schedule push' and the hierarchical organization that it implies, and therefore it is removing the type of control that is conventionally used to match resources to tasks, and customer demand to supplies and services. Organizational hierarchies have become too expensive to sustain, and in many cases their style of coordination is simply no longer necessary. The cost complexity of the industrial complex starts to outweigh the benefits and the Internet is making it redundant. The question I put forward in this paper, after a short description of how I envision 'the change', is what new requirements should be met by software in order to meet the requirements of the networked economy. Business will develop from B2C to C2B to P2P, customers more and more taking control over business activities, overhead being replaced by customer focus. This is also a new reality for the software world.

by: Frans van der Reep

In this article I first give a brief discussion of what change is going on in the various domains of business, politics and society (*figure 1*). From this development I propose the 3C model as a taxonomy from which we can look at organizations from various view points (*figure 2*). As the Internet, social media and the resulting P2P networked economy will have a major impact on the corporate organization and business models I pose the question what impact this will have on software development as well. What requirements will have to be met for software to be robust in the P2P networked company basically driven as a community and from the viewpoint of technology, meaningful work and the organization of work?

From Schedule push towards Reality Pull

My expectation is that within five years this trend towards the P2P networked economy will have a major impact on the corporate organization. Jobs will be lost from the hierarchy and its related well structured environment basically putting people in a reactive mode. The jobs that remain and new jobs will be very different, less structured, and will put people much more in the driver seat than we were used to in our jobs in the last decades. Instead of reacting ('schedule push') you should behave as an intrapreneur ('reality pull') and act from your own creative viewpoint. Instead of more ERP-supported supply chain management,

employees, and eventually customers, will be therefore more and more the project managers of their own work – a concept I call 'reality pull'². Big organizations only survive in a dynamic market by redesigning at least the organizational front-office into small autonomous units that can quickly react to volatile customer demand. Small cells can quickly respond to the market, but use the big corporate database and expertise. They combine the advantages of a big company with the advantages of a small company³. This is where social media and corporate social networking enter the picture and ERP ('enterprise resource planning') and workflow management applications should be repositioned. Of course, Twitter and Twitter lookalikes such as Yammer are not only tools. They are concepts. They are open source, a-synchronous means to make the world much more transparent in terms of knowledge transfer and finding your pals – who's your *pals*? What's your ability to pool, ally and link? – These tools allow you and me at an even lower price to find our peers and pals, enlarging our ability to pool, ally and link, thereby enhancing our capability to create goal-oriented communities, networked organizations and focused action. Moreover, Twitter allows for 'the real time Internet', beating search engines by days in terms of quick, real time response capabilities⁴. Such technologies create flexible networking organizations where ERP systems will have difficulty as it forces the

organization into rigid structures. P2P banking, like Zopa or smava, may serve as an example for this development towards networked centered, barter oriented social companies⁵. An example for the real time Internet: for traditional newspapers, Twitter may serve as a new and cheap alert system for breaking news for their subscribers: just post a tweet. In the Netherlands, noppes.nl may serve as an example of the return of barter, using the LETS as a social currency. It's all there, mirroring the future as I see it.

What is then the basic shift companies have to make to become a viable 21st century company? My informed guess is that where cooperation in the 20th century basically was a non-personal top-down, management driven calculation (stemming from 'scientific management'), the driving-force of cooperation will evolve into a bottom-up personal decision. Lean and mean will become lean and meaningful. ICT will become human centered ICT, allowing for meaningful jobs for all involved, e.g. allowing appreciating the individual contribution to the big picture.

The web will also provide for RRR parameters, referring to ratings, rankings and reviews, creating even more transparency in the networked economy⁶. That's another world than fixed career perspectives and job descriptions from the reactive world⁷.

Survival of the most cooperative

The game will be more and more about personal presence and personal branding. Not about the ego driven: 'I'm special', but about fostering the 'I'm unique' attitude. Not about scheduled push mass solutions but about reality pull, personalized solutions appreciating diversity⁸. The non-personal top-down planning and strategy approach will be at least partially replaced by personal and continuous prototyping and 'perpetual beta', thereby each of us turning into an action driven entrepreneur of our own talents and forcing us to leave our safe job titles: be willing to experience. (figure 1): From survival of the fittest towards survival of the most cooperative.

Compassionate capitalism

Social media facilitate corporate social networking and accelerate this development towards a value-based network-centric attitude. It will force companies to become even more networked and therefore more human centered as this co-operational attitude fiercely reduces business operating costs⁹. Big corporate companies will probably in the short run evolve into financial holdings, enabling 21st century human centered social companies creating a personal age for its members, thereby, I hope, establishing a compassionate capitalism instead of a piranha economy eating each other without any human respect, and thereby combining the best of both worlds of continuity and flexibility.

Of course, one of the challenges is to relate this 21st company to the existing arena and not to start a new 'unrelated' clan or tribe or your own youtopia. The game is about rebalancing various experiences and appreciating and building sustainable diversity. There is much to learn from the 20th century company as well.

In society, politics and business, top-down management is being replaced by bottom-up, peer-to-peer-driven action and P2P quality review at least in our European region: the pat on the back from your peer, nothing is more motivating. The roughly 1 million Soho (sole traders) now operating in the Netherlands, are a reflection of this movement towards peer-to-peer network based operations in this personal age. *Figure 1* describes this evolution¹⁰ towards distributed teamworking and distributed power.

Lean and meaningful

One element I personally hope for is that this trend may lead from old 'thinking' to new thinking". From lean & mean business focus, people being treated as "nuts and bolts" in a mechanical systems approach, to lean & meaningful business, providing meaning to people, planet and profit.

Whatever happens, there is a lot of leadership, transformational change and understanding what's really changing needed to really build new and sustainable business. Not really understanding the change usually leads to doing nothing and waiting, which would not be a good starting-point to build new earning power.

Having outlined the way Internet is changing the way we work, we will now deal with the specific requirements current and future organizations and software packages must meet, in order to be robust in the light of this development from top-down to bottom-up shaped business operations.

So, this article doesn't only analyze and summarizes the results of research. It also reflects my hope, based on 35 years of working experience.

The Courts of Justice and the newspapers seem to obey this development from top-down towards bottom-up as expressed in figure 1. They also tend to shift towards the South East box of the figure 1. As citizens become more empowered or at least less disempowered, they seem to get more influence on justice being done". If that's ok, I don't know. It just is as it is. One may hope that the medieval lynching doesn't return as common social habit and that too much subjectivity will not occur.

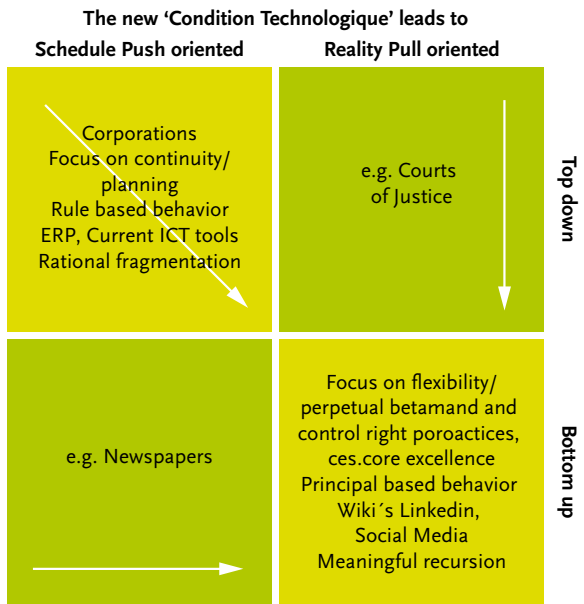
The newspaper is also heavily impacted by social media, I mention it in figure 1, as it is at least partly being replaced by 'blogging' and 'civil journalism'¹²,

Architectural changes allowing for meaning

What is the big difference in comparison to the present day? And, will there be a difference? My opinion is that future organizations and business tools used have to provide for meaning. The lean & mean has to change into lean & meaningful for all involved. The question is what architectural principle should be introduced and implemented to meaningfulness in the business realm. My claim is that, within a few years, a new set of human centred business (ICT) tools will occur that foster, or at least not spoil, 'meaningfulness' for all involved.

The currently used software packages and organizational hierarchy based structures favour organizational fragmentation and are in drastic contrast with building businesses

Figure 1: what's happening



by building communities driven by self-organization. They mainly support the 'scientific management' ideologies stemming from the early 20th century. ERP applications like Peoplesoft, SAP, Oracle and others, showing synchronous communication properties, force employees into 'the right' job descriptions and 'right' company practices, "this is the way it is", and put them into rigid company organization structures where only coded information is valid, thereby ignoring the value of tacit knowledge and P2P networking³. ERP approaches the optimal shaping of cooperation in explicit business processes as a rational calculation usually with the help of optimizing spreadsheets, lots of parameters and solidified in manageable organizational structures and formal job descriptions.

That may a good way of problem solving in the material, "nuts and bolts" business like oil refinery, or manufacturing cars but it may cause problems if applied to humans⁴. Cooperation should not be perceived as the outcome of a rational computation but also as a personal decision of those involved to do so. E.g. If you look upon someone through the eyes of his or her job description you may easily see just 20% of his individual business potential as this description doesn't catch all the rest.

Business organization consultants and software designers should therefore pay more attention to human aspects of the organization structure and the software in order to create meaningful business. Organizations and software packages should allow for or even support this paradigm shift from top-down schedule push management, defining cooperation as the outcome of a spreadsheet, to bottom-up reality pull community building where the willingness to cooperate roots in a personal decision.

I think that every software package or organization that, basically, reduces people to 'nuts and bolts' in a closed, mechanical systems approach, has no chance of surviving. In this type of workflow and other non-human centered

software, as they now fit together, work is fragmented and people are removed from the context of their work by compartmentalizing the work into various silo's, hard coded in the software and called departments, each separately managed and usually driven by short-term targets. At least this combination of this way of using ERP software and topdown management disconnects the soul from the work and makes real commitment to business goals impossible⁵. Fragmentation as an architectural principle works fine for the material business, production plants e.g. with its standardisation and economies of scale, and also for activities where strong formal and legal requirements seem to be necessary as long as we do not trust the wisdom of the crowd, like in, for example, various formal compliance procedures like Sarbanes Oxley and certification procedures. But in other places it is a bad idea. People lose their sense of meaning and commitment, if they do not understand, and often haven't been told, their contribution to the total picture.

Where people lose sight of the context they are operating in, distrust emerges and this distrust puts controllers into power. Where a sense of significance disappears, distrust enters the scene and top-down management with a strong control attitude becomes a necessity.

In general, I find the developments within organizations shouldn't differ too much from what seems to be happening in society and the political realm where the referendum, grass root democracy and the wisdom of the crowd becomes more and more popular in this global region. An organization that develops into an anachronism will not survive.

So again, what requirements would a future-proof organization and software package have to comply to? What is wise practice and what should be prevented? What could be done to postpone or at least reduce the feeling being separated from our selves in our jobs?

We need solutions that no longer lock us in our job descriptions and that make it possible to see our contributions to the broader system. Separation from the sense of contributing to something bigger deprives us from having meaning, which is also probably not very healthy. ERP-like fragmentation as an architectural solution principle leads to such "nuts and bolts" approach and leads into the inhuman, to quote Kierkegaard.

Recursion

For the ICT domain I expect a shift towards human centered ICT, a class of ICT tools which do not reduce me as an element in a complex system but that allow me to perceive my contribution in a broader context. I expect that ICT tools will come up that allow for presencing as Peter Senge et al. defines it: understanding your action in a broader context⁶.

As requirement, I introduce 'recursion' as described e.g. in the famous "Droste effect"⁷. From anthropology we have learned that a social system is viable only if it satisfies the requirement that all its subsystems encompass basically the same functionalities as the whole. All essentially viable social systems are recursive. So let's adopt the consilience



Software voor service management oplossingen

Ondersteuning medewerkers

ICT | HR | FM

Eén loket

Shared services

Self service

Ondersteuning zakelijke relaties

IT-dienstverlening

Managed services

Customer support

Self service

Ondersteuning burgers & overig

Klant Contact Centrum

Burgermeldingen

Klachtafhandeling

Self service

by control excellence and often supported by ERP systems. Best practice are driven by operational excellence. Shared practices are driven by core excellence: you exactly need to know what you are good at. Next practices are different in nature and are shaped by communicational excellence²⁰. To give you some data: In the Netherlands 65 percent of the companies run on 'command and control' based right practices.

As pointed out in figure 2 we should find a new balance between the non-recursive right practices and related control excellence, the best practice approaches focused on operational excellence and the shared practices on the basis of core excellence. In a few years, we will embark on the recursive next practices based on communicational excellence providing for personal meaning for all connected, the 'ego system' being ruled (out) by the chief meaning officer²¹.

In my opinion non-recursive software developments and organizations, no matter how nice and cloudy we call them, have no chance, over time, because they do not give context and meaning to those who are using it. They will vanish in the cloud. Software packages and network organizations that support recursion will not only provide for lean & mean but also for lean & meaningful business operations. This will shift our focus from survival of the fittest to survival of the most cooperative.

There are lots of adventures out there. Find them. Enjoy them. Be willing to experience.

And have fun, much more fun, probably much more money. Are you 'in'?



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- 1 I would like to thank Piet Alblas, Hans den Hartog, Peter van den Heuvel and Jonathan Zondag for their valuable comments on earlier versions of this paper. This paper reflects my personal view.
- 2 I consider the quick rise in the number of SOHO entrepreneurs in the Netherlands up to approximately 1 mio now as a reflection of this development.
- 3 The organizational impact of the Internet and the way the Internet changes the organization of work has been further explored in Van der Reep, F (2005), from schedule push to reality pull, European retail Digest, Oxford University, issue 48, Winter 2005, page 33-37, reprinted in IT Management Select, Volume 15, Winter 2009-2010, pages 36-41.
- 4 For example Hans Kooistra quotes in his Telecommerce columns various sites, reflecting these social media developments. As an example he mentions twitter.com/zappos, with 1.3 mio followers with each month 4000 new followers. More examples on <http://wiki.beingpeterkim.com>. Kooistra, Hans, <http://ht.ly/2dfbu>
- 5 The Internet impact is well described in e.g. : Applegate, M, et al, *Corporate Information Strategy and Management*, McGraw-Hill (2004), sixth edition. The aspect of recursion I am pointing at in this paper is not mentioned in this book and as far as I know not in business literature.
High level impact of the Internet impact on individuals, business and society is described in: Van der Reep, F (ed) and P van den Heuvel (ed), *About an Analogous Life in a Digital World, How Cyber Commotion impacts your Business' and Private Life*, Rotterdam, 2005
- 6 Kooistra mentions in the Telecommerce columns I referred to earlier, among others, www.glassdoor.com, www.bby.com and www.odesk.com as examples from RRR mania. <http://tweetspsych.com> and <http://socialment.com> enable you to profile someone on the basis of his tweets. Unfortunately social media also accelerate bashing, a very nasty thing.
- 7 One might say that the Internet enables the personal age for everyone. This view is expressed, for example, in

- Gerritsen, Mieke (ed) and Geert Lovink (ed), *everyone is a designer in the age of social media*, Amsterdam 2010
- 8 In the Netherlands there are nowadays tests with trains travelling between Amsterdam and Eindhoven so frequently, not using fixed schedules anymore, that the train almost becomes a reality pull driven public transport like a taxi.
 - 9 In my own research I systematically find double digit cost reduction where individuals shift perspective from survival of the fittest to survival of the most cooperative and really start to cooperate instead of acting from parallel self-interest. What really makes this so difficult from a standpoint of transformation management is that real cooperation makes both dependent and invisible. As being independent and being visible are for most of us survival strategies with which we were raised this shift in perspective is not trivial. It means letting go one of our basic ideologies.
 - 10 E.g. <http://www.youtube.com/watch?v=4YcQHQUYWs>, London, may 15th 2009.
For figure 1, see F vd Reep, Vuistregels voor succesvol innoveren, (in) Overheid Innovatief, nr 6, 2005, page 33
 - 11 Shirky, Clay,, *Here comes everybody, Revolution doesn't happen when society adopts new technology, it happens when society adopts new behaviors*, New York, 2008.
In the Netherlands e.g. Peter R. de Vries is an example of this development towards bottom-up action focused civilians taking over the court of justice. Whether this is ok or not ok is up to you to decide... Scientific reflection on this development may be found in R.J. In 't Veld (ed.), *Knowledge Democracy. Consequences for Science, Politics and Media*. Berlin/Heidelberg: Springer, 2010.)
 - 12 The 'traditional' Western newspaper seems to become more and more the source code for social media users and the platform for communicating expert views. On the other hand, newspapers may have additional value in widening the scope in terms of showing and pinpointing to its readers new view points from new combinations in our 'connected future'.
 - 13 The 3C model is further explained in:
Van der Reep, F and P van den Heuvel, 3C, internet dynamics and retail, towards a new market segmentation? (in) European retail Digest, Oxford University, Spring 2006, issue 49, pages 55-60
- <http://www.inholland.nl/NR/rdonlyres/6C17C1F7-DE1D-4996-9015-1276FF083C24/0/ITManagementSelectwinter20092010FvdR.pdf>
- <http://www.inholland.nl/NR/rdonlyres/15533E4E-DB16-4D3C-937E-FFB667B8175A/0/EuropeanRetailDigestOxfordUniversityjuli2006.pdf>
 - 14 A discussion of the impact of social media on logistics may be found on http://www.logistiek.nl/blogs/artikelen/id328-Gaan_social_media_de_logistiek_veranderen.html?nb=logistiek&editie=12%20juli%202010&link=Gaan%20social%20media%20de%20logistiek%20veranderen?&WT.mc_id=mail_logistiek_12%20juli%202010
 - 15 Mark Govers, who wrote his PhD on this theme, states that the necessary variety in process output as a result of business dynamics needs a management as well. His finding is that, in practice, ERP forces business process too much in standards, neglecting vital differences. His suggestion is to use various ERP systems for various business process groups.
http://www.logistiek.nl/dossierartikelen/id93-ERP_maakt_bureau-cratisch.html
 - 16 Senge, P, et al, *Presence, An Exploration of Profound Change in People, Organizations an Society*, Doubleday, 2005
 - 17 For further explanation: <http://en.wikipedia.org/wiki/Recursion>
 - 18 <http://en.wikipedia.org/wiki/Consilience>. 'Consilience' states that generalizations arrived at in one scientific area have often help in understanding other areas. The fact that all different areas of research are studying one real, existing universe is an apparent explanation of consilience. Here I apply the concept by assuming that requirements for social systems arrived at by anthropologist will also be valid in the business system environment, usually called organization.
 - 19 Of course we have to tackle the problem of the infinite loop that is often related to recursive structures creating memory overload. But I'm sure that's a solvable problem.
 - 20 'right practices' are usually the domain for ERP systems (SAP, Peoplesoft, Oracle). Perhaps Apple comes closest to really supporting communicational excellences in their concept that each user should create his own, customized ICT environment by downloading the applications he wants to use. However, that implies that the Apple concept should allow downloading, in principle, any application in the Apple environment. In terms of figure 1 the Apple user community shows a lot of bottom-up, reality pull community driven application development, leading to a perpetual beta and, perhaps, recursion avant la lettre.
 - 21 Lineke Sneller and Peter van den Heuvel have found in recent research that in terms of the 3C model (figure 2) all types of activities mentioned there are currently being supported by ERP systems in the Dutch market with the 'next practices' as an exception. The drivers for implementing ERP are different in the three boxes. What the 3 boxes have in common is that optimizing is driven by best practice focused fragmentation leading away from recursion. The next practice box doesn't show ERP use for general management. Sneller, L. and Peter van den Heuvel (2010), 3C en ERP; het verband tussen marktsegmentatie en informatievoorziening, (in) *Weven en Waven, Op naar Digitopia?* Pages 156-168, Rotterdam, 2010