

## EDITORIAL COMMENT

In this article, van der Reep argues the need for a new architectural principle when designing software systems. The Internet and its capacity to provide social media technology is creating a new P2P networked economy. An economy based around people working together and which will have a major impact on the corporate structure and its business models. However, most of the current software, e.g. ERP or supply chain

management systems, support organizational fragmentation where people are treated just like "nuts and bolts". This will have no future and a shift should be made to a more human centric architecture where 'lean and mean' is replaced by 'lean and meaningful'. Van der Reep calls this architectural principle 'Recursion', where any subset of the system contains all the functionality of the complete system.

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	Business	Information systems	Technology
Strategy			
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# Social Media and Social Companies

## ABSTRACT

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 Article, 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 Business-to-Consumer (B2C) to Consumer-to-Business (C2B) to People-to-People (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.

First, I 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 viewpoints (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 will this 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's 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.”<sup>1</sup> 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 they use the big corporate database and expertise.



They combine the advantages of a big company with the advantages of a small company<sup>ii</sup>.

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, asynchronous means to make the world much more transparent in terms of knowledge transfer and finding your pals – Who's your *pai*? 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 capabilities<sup>iii</sup>. Such technologies create flexible networking organizations where ERP systems will have difficulty as they force 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 companies<sup>iv</sup>.

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 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 21<sup>st</sup> century company? My informed guess is that where cooperation in the 20<sup>th</sup> 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 appreciation of 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 economy<sup>v</sup>. That's another world than fixed career perspectives and job descriptions from the reactive world<sup>vi</sup>.

### 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 diversity<sup>vii</sup>. The non-personal top-down planning and strategy approach will be at least partially replaced by personal and continuous prototyping and "perpetual beta," thereby, turning each of us into an action driven entrepreneur of our own talents and forcing us to leave our safe job titles – be willing to experience (See Figure 1 below): 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 costs<sup>viii</sup>. Big corporate companies will probably in the short run evolve into financial holdings, enabling 21<sup>st</sup> century human centered social companies that create a personal age for its members, thereby, I hope, establishing a compassionate capitalism instead of a piranha economy, all 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 21<sup>st</sup> 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 20<sup>th</sup> 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 evolution towards distributed teamworking and distributed power.

*The new “Condition Technologique” leads to*

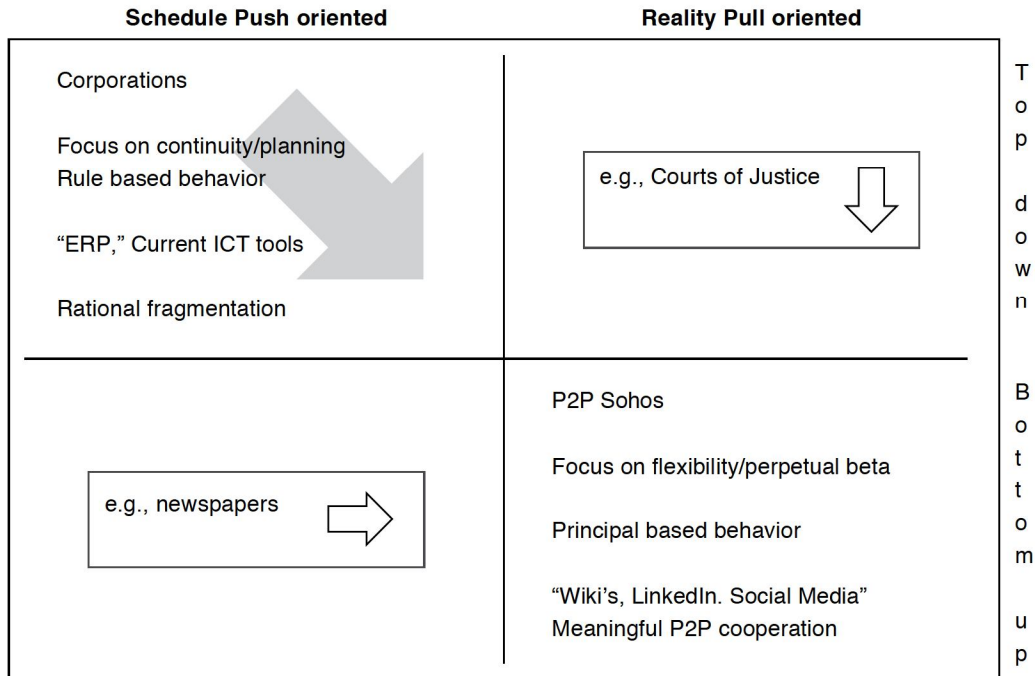


Figure 1 What’s Happening

### Lean and meaningful

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

Whatever happens, there is a lot of leadership, transformational change, and understanding of 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.

So, this article does not only analyze and summarize 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 be influenced by 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 have more influence on justice being done. If that’s OK, I

don’t know. It just is as it is. One may hope that medieval lynching doesn’t return as common social practice, 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.”<sup>x</sup>

### 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 the business tools used have to provide for meaning. The lean and mean has to change into lean and meaningful for all involved. The question is what architectural principle should be introduced and implemented to bring meaningfulness into the business realm. My claim is that, within a few years, a new set of human centered business (ICT) tools will occur that foster, or at least do not spoil, “meaningfulness” for all involved.

Having outlined the way Internet is changing the way we work, we will now deal with the specific



requirements that 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. The currently used software packages and organizational hierarchy based structures favor organizational fragmentation and are in drastic contrast with building businesses 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 the “right” company practices – “this is the way it is” – and then into rigid company organization structures where only coded information is valid, thereby ignoring the value of tacit knowledge and P2P networking<sup>xi</sup>. 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 be a good way of problem solving in a material, “nuts and bolts” business like oil refinery or manufacturing cars, but it may cause problems if applied to humans<sup>xii</sup>.

Cooperation should not be perceived as the outcome of a rational computation but also as a personal decision of those involved. E.g., If you look at someone through the eyes of his or her job description you may easily see just 20% of his or her 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

with 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 silos, hard coded in the software, and called departments, each separately managed and usually driven by short-term targets. This combination of using ERP software and topdown management disconnects the soul from the work and makes real commitment to business goals impossible<sup>xiii</sup>.

Fragmentation as an architectural principle works fine for the material business, production plants, etc., with their standardization and economies of scale, and also for activities where strong formal and legal requirements seem to be necessary so long as we do not trust the wisdom of the crowd, as in, for example, various formal compliance procedures like Sarbanes Oxley, and in 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 with? What is wise practice and what should be prevented? What could be done to postpone or at least reduce the feeling of being separated from ourselves in our jobs?

We need solutions that no longer lock us into our job descriptions and that make it impossible 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 a



"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 to 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., define it: understanding your action in a broader context<sup>xiv</sup>.

As a requirement, I introduce "recursion," as described, e.g., in the famous "Droste effect"<sup>xv</sup>. 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 principle here, and let's assume that organizations as social systems, indeed, should obey the same requirement as stated by anthropology for viable social systems.<sup>xvi</sup>

It is to be expected that these class future tools then will be recursive in architecture. Recursion means that a subset of the system still contains all functions of the system. Anthropologists define recursion as one of the main properties of all viable social systems: non-recursive social systems are not viable. Networked organizations are recursive. Each node has all properties of the whole thing. Network supporting applications like LinkedIn are, in principle, recursive as well: The template for one individual to be filled in is, in principle, the same as the template for the group. ERP systems are not recursive. In an ERP environment, as it works now, the user doesn't get information of the context of his task on the screen: one user doesn't get and isn't meant to get the full picture. This fragmentation harms meaning and will presumably not last very much longer as it deprives many of us working in such an environment from the feeling that we make a difference and have real significance. Perhaps "role based ERP use," as it now becomes available, will soften this problem as ERP then serves the organizational role you have and not merely the job description. Whether ERP will really meet the recursion requirement is not clear yet. But let's wait and see. To me, SharePoint as a tool for intranet communication within the organization seems to be sufficiently robust to func-

tion in a network centric context. However, many top-down, management driven organizations don't choose to use it as a network in a principle supporting system, facilitating the organization as a community.

My feeling is that recursion may also be an architectural principle for the ICT domain in order to provide not only for a lean and mean but, more importantly, for a lean and meaningful task for those involved. More and more companies will focus on flexibility rather than continuity. Many companies will therefore have the character of temporary projects, creatively destructing themselves.

My opinion is that operating within a recursive system provides for context and meaning for each connected individual being a node in the network<sup>xvii</sup>.

We need human-centric systems, both organizational and ICT, that will make our entire competency set available to the group or to the market of our choice. LinkedIn is such a recursive example. Social media are. Usually this class of applications is asynchronous in character. You define yourself within your own group. And that group may define itself in an even broader context with exactly the same template. ERP, on the other hand, is not recursive; Workflow Management systems are not, in principle, recursive either. If you know examples of this class of tools, please let me know!

The old thinking, based on Taylor, scientific management, and the division of labor, defines and treats everyone as an element in a mechanical system leading to lean and mean performance, supported by ERP applications but depriving someone from meaning as he or she lacks context. Organizational structures based on recursion, on the other hand, to put forward the new thinking, makes it possible to *close the circle of (business) life* for all involved and is much more a basis for engagement and meaningful jobs.

The trend in the labor market towards organizing itself as a number of individual entrepreneurs, using communicational excellence and finding their *pals* (your ability to pool, ally, and link is a core competence here) to do business together, even in a temporary setting, makes basically every colleague a recursive node in the network. Such an individual Soho runs a full company from marketing to collecting. But the group, of which the Soho is a part, is also a company with the same functionality: networks are in principle recursive.

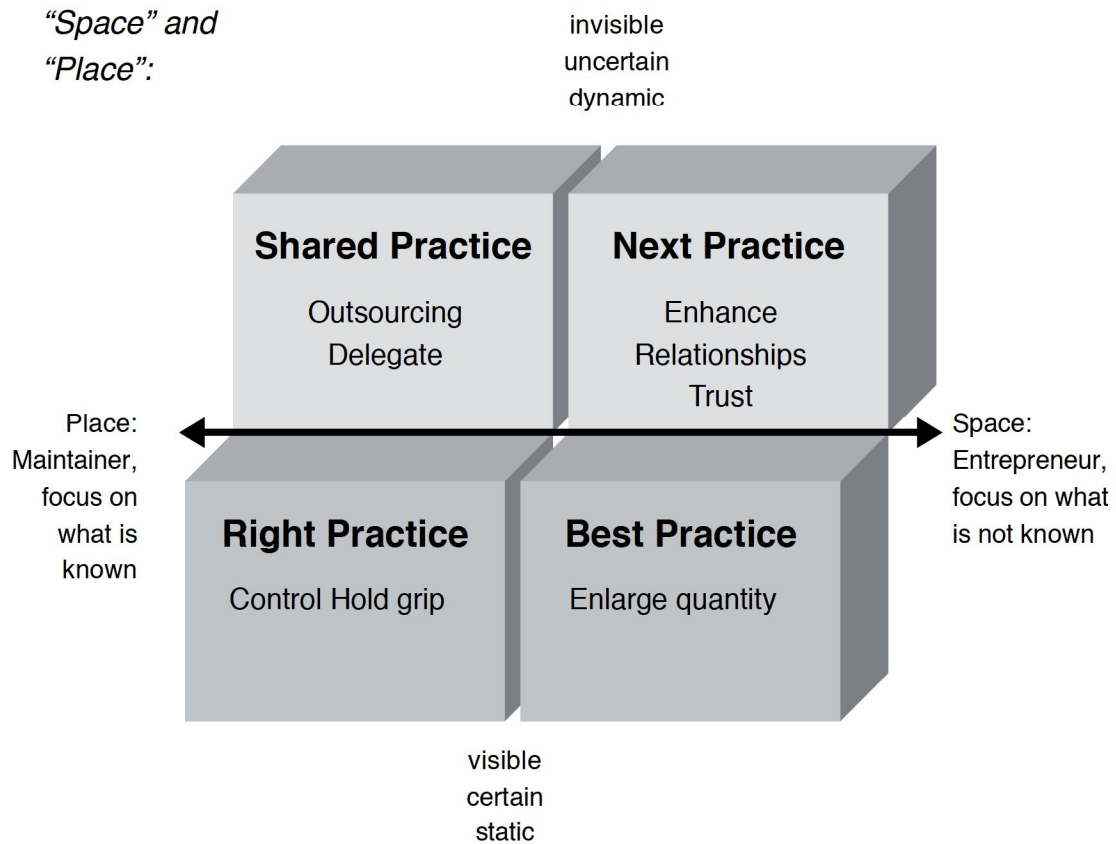


Figure 2. Space and Place

Of course, in society we cannot do without some “right practices.” Each society needs top-down structures in order to define what is legal and what is not, to keep record of ownership, land registry, etc. And, of course, in the material businesses there will occur a lot of “right” and “best” practices as well, as they are the heart of the matter there. But where business value comes from human cooperation, I feel one should adopt shared and even next practices based on recursion.

#### **The Quest for Meaning Will Require New ICT and Organizational Architectures.**

In the same vein, I expect, as a trend, that where we first looked at the Chief Operational Officer to improve our businesses, and where the attention is now on the Chief Learning Officer, in a few years from now, attention will shift towards the “*Chief Meaning Officer*” as its successor. His or her contribution will be directed toward detecting whether

communicational excellence is being replaced by control excellence for short-term reasons, and to assuring that enough space remains for meaningful work for all engaged. Compliance in the 21<sup>st</sup> century: Chase the vision, not the money...

The quest for significance will drive many of us away from the big corporations with their rigid structures and will lead to finding meaning in value based networking.

Each tool and structure used in this future business environment should allow for P2P networking, as well, and should, therefore, be recursive in character. Figure 2 sets the stage and serves as a taxonomy. Right practices are driven by control excellence and often supported by ERP systems. Best practice are driven by operational excellence. Shared practices are driven by core excellence: You need to know exactly what you are good at. Next practices are different in nature and are shaped by communicational excellence<sup>xviii</sup>.



To give you some data: In the Netherlands, 65% 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 officer<sup>xix</sup>.

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 and mean but also for lean and 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”?

#### About the author

Frans van der Reep is a visionary practitioner – known as researcher, trendwatcher, writer, regular speaker, and entrepreneur. He is Senior Strategist at Getronics Consulting and Professor at the Dutch INHolland University of Applied Sciences.

#### References

- i 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.
- ii 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.
- iii 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>
- iv 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
- v Kooistra mentions in the Telecommerce columns I referred to earlier, among others, [www.glassdoor.com](http://www.glassdoor.com), [www.bby.com](http://www.bby.com), and [www.odesk.com](http://www.odesk.com) as examples from RRR mania. [Http://tweetpsych.com](http://tweetpsych.com) and <http://socialmction.com> enable you to profile someone on the basis of his tweets. Unfortunately, social media also accelerate bashing, a very nasty thing.
- vi 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
- vii 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.
- viii 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, too, 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.
- ix 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.)
- x 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 my have additional value in widening the scope in terms of showing and pinpointing to its readers new viewpoints from new combinations in our “connected future.”
- xi 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>
- xii 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](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)
- xiii 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 variety in management as well. His finding is that, in practice, ERP forces business process too much on standards, neglecting vital differences. His suggestion is to use various ERP systems for various business process groups.
- xiv Senge, P, et al , *Presence, An Exploration of Profound Change in People, Organizations an Society*, Doubleday, 2005
- xv For further explanation: <http://en.wikipedia.org/wiki/Recursion>
- xvi <http://en.wikipedia.org/wiki/Consilience> . "Consilience" states that generalizations arrived at in one scientific area have often helped 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.
- xvii 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.
- xviii "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.
- xix 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

