

## 2013 – Predictions on Collaboration

If anything the pace of change from technology is speeding up. So how will 2013 be different than 2012? Will 2013 actually be the “year of collaboration?” Something people have been predicting every year for the last 20 years. I can remember writing articles in 1990 about “will this be the year for GroupWare?”

What I can say about 2013 is that more people are now aware of collaboration (in whatever form) and how critical it is to work. Many of my predictions are about new and sweeping technologies, but many others are about people and process. But let’s see how things play out via the 10 predictions below:

1. **Collaborative Tools for HR:** My old joke about HR was that “its role was to lose resumes.” But things have changed and so is HR. Aside from the fact that talent can now be crowd sourced ([Barrel of Jobs](#), [BeKnown](#), [Simply Hired](#), [Top Prospect](#), etc.) and people are using their personal networks to find candidates. HR has to create better processes to collaborate around top talent, and its acquisition, because if you found them, then someone else did also! Tools like [CollaboRATE](#) not only help rate candidates, but expedite the hiring process.

Then let’s take into account the mobile revolution. Collaborative tools on mobile devices are changing the way we work. Tools like [Seismic](#), [Fuze Meeting](#), [Soonr](#), [Mighty Meeting](#), and others not only support documents and content on mobile devices, but full multi-media and video conferencing.

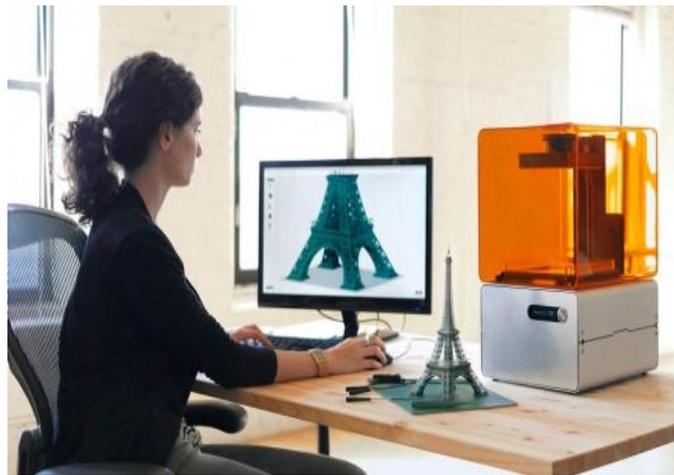
It is now possible for a scenario like this to occur: Acme Corp needs a new widget architect. Widget architects are not that easy to find, so when the requisition comes to HR they try a variety of channels: They ask everyone in the company if they know of such a person or have worked with such a person. They then tell employees that if they or their friends help find the right widget architect, and they get hired, you will receive \$5000. They can use a host of tools to search for widget architect, like on [LinkedIN](#).

Once candidates are located they may be initially screened through a quick test on widget architecture to cull the best of the group. They are then passed into a collaborative HR system where multiple people (including the hiring manager) can interview the candidate (most anywhere through a mobile device) at whatever level of interaction they want (text to full video). A few candidates make it through this process which may take a day or two (not weeks), since you can assume these talented widget architects have other offers. Offers are made to the candidates, and the ones that accept have been found and hired within a week. The candidate may be on the other side of the globe and work virtually, or may fly in occasionally to work with the widget team. The whole process is documented and then stored with the candidate’s records for future use. As Andy Grove (former CEO of Intel) once said “you are either quick or dead.”

Another big change coming is thinking of people/employees as a service. I have talked about how groups of people can be a service (crowds), but this is the idea that an individual person can be a service. Or as [CollabWorks](#) puts it, a WaaS (Worker as a Service) i.e. having the right worker do the right work at the right time. This is a new concept which I expect we will hear more of in 2013.

2. **3D Printing will Change Supply Chain:** Last year the only prediction I got wrong was around supply chain. I predicted that by adding in collaboration, and helping to break down the silos inherent in supply chain, that supply chain would get better. I was wrong not about the idea, but rather the time it will take for this to get implemented. This year I am starting to see other changes. What happens when an inefficient system (many a hundred years old) born of the industrial revolution meets the Internet? The answer is that it gets disintermediated! Disintermediation is a banking term for removing the middle man and making the (financial) process more efficient. It happened to Borders Books when Amazon was able to disintermediate them, and there are plenty of other examples.

This year 3D printing I think is going to start to disintermediate supply chain.

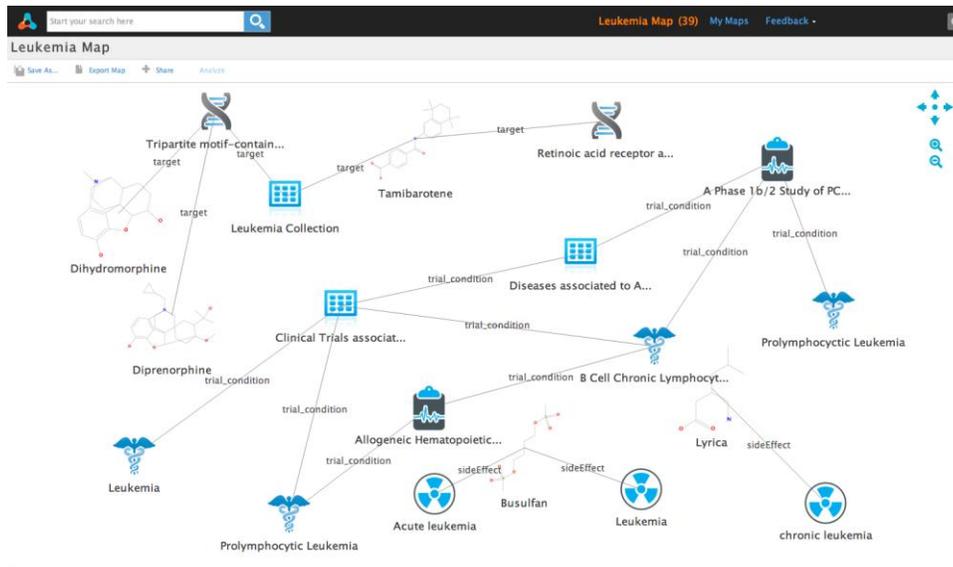


**Figure 1: Prosumer 3D Printer: 25 Microns, \$3K**

The idea of 3D printing is not a new one. It has been around for about 10 years or so. Basically, it is a printer, much like the ink jet printer you have on your desktop today. However instead of using ink particles to show up on paper, it uses resins and other materials to build actual 3D objects a layer at a time. How then does this effect supply chain, in some ways it eliminates it. It also incorporates the “personalization and customization” trend that others have commented about. There are already services that will, if you send them your picture, will create a protector case for your iPhone based on that picture. It does not just incorporate the picture, but the case is the picture.

Today you have to send away the picture and you get an iPhone case back in the mail. But what about when Safeway, Walmart, Costco, CVS and other large retailers ([Staples I think already starting to offer this service](#)) have a 3D printer in house and you can just ship them the CAD file for the item you want, and go by and pick it up. Since there will be a lot less delivery, warehousing and shipping, I would think that UPS and FedEx should be converting their stores rapidly to start to support this trend.

3. **Ubiquitous Video Conferencing:** Video seems to be much more important in the post-PC era, it is part of the “I don’t want to miss anything” trend we are seeing. Last year we saw the rise of the “ubiquitous end-point” with [Vidtel](#), [Vidyo](#), [Magor](#) and others all offering systems that could connect with any end-point, mobile, desktop, room-based, etc. Most of the MCU’s or video bridges are in the cloud now so you don’t have to fight with that hardware any more. Streaming video available on most every mobile platform (depending on your broadband connection), now it is time to go to the next level and have video conferencing on every device. Yes, I have [FaceTime](#) on my Apple mobile devices, but it is limited, and I don’t use it very much. I use most of these devices to consume content, and less to generate it. Some of this is due to size (iPhone) but that is not a limitation with an iPad, yet very few people seem to use their iPads for video conferencing. I see the rise of applications that make it easy to do videoconferencing in one click on most any mobile device in 2013, making video-conferencing finally ubiquitous!
  
4. **Collaboration on Big Data:** According to IBM, 2.5 quintillion bytes of data are born every day (enough to fill more than 531 million DVDs), and 90 percent of the world's digital information was produced over the last two years. With this explosion in large data sets there are many start-ups that help you to deal with big data often in a visual or graphic format where it is easy to see trends and patterns (something that people are really good at). Oracle just bought [DataRaker](#) (big data about energy and utilities) to help with this, [IBM](#) has been producing tools for Big Data for a while (but other applications like [Pentaho](#), [SAS](#), [Tibco](#) and others also offer solutions in this area. For a list of other big data start-ups see (<http://pinterest.com/bigdatabbq/big-data-startups/>)



**Figure 2: Entagen TripleMap for Leukemia**

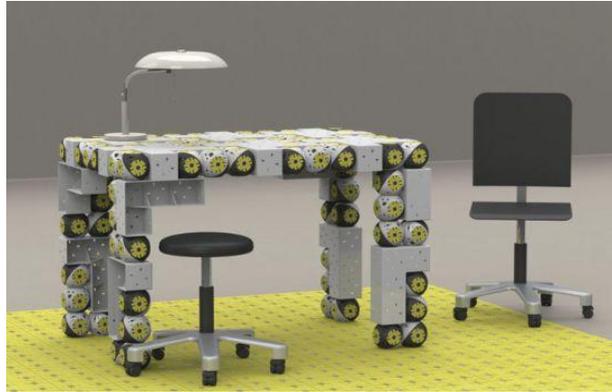
But there are fewer applications that let you share and manipulate the data with others.

[GreenPlum \(a division of EMC\) Chorus](#) claims to let you collaborate with others around big data, [Entagen TripleMap](#) also allows this see (Figure 2 above).

5. **The Changing Workplace:** I did a webinar (sponsored by Citrix Online) which had over 1000 people sign up. The title of the webinar was: “The Secret Future of Work; 5 technologies that will transform your workplace.” The 5 technologies are: nanotechnology, 3D printing (covered in prediction 2), heads-up displays and augmented reality, Brain-machine interface, and driverless cars.

**Nanotechnology** is the ability to build things with very, very, very small robots, so small that they can move atoms and molecules. Today these technologies are used most often in material science and wellness. How they will affect your work place is another story.

Imagine the ability to build a desk or chair to your specifications and grow it right out of the floor when you need it (see Figure 3). Or the ability to re-configure your office for whatever



**Figure 3: Modular Roombots self-assemble to become furniture for your sci-fi abode**

you are using it for; a meeting, lab workbench, video conferencing room, etc.

**Heads up displays and augmented reality** are already in use. They have been used from everything from multi-player war games, to displays in aircraft and cars. Below we see Tom Cruise in *Minority Report* using a wide variety of virtual reality displays to give him information on whatever future criminal he is tracking down.



**Figure 4: Information displays from *Minority Report***

You can find similar displays today from a company called [Oblong](#) in Southern CA.

**Brain-Machine Interfaces:** This is the ability to connect directly to your computer from your brain. I know it sounds science fiction, and you expect an evil scientist and a bad robot to show up, but we really can do it today. Below see a picture of a woman who is a quadriplegic being able to give herself the first sip of Coke she has had in 15 years. She is doing this through a chip implanted in the motor cortex of her

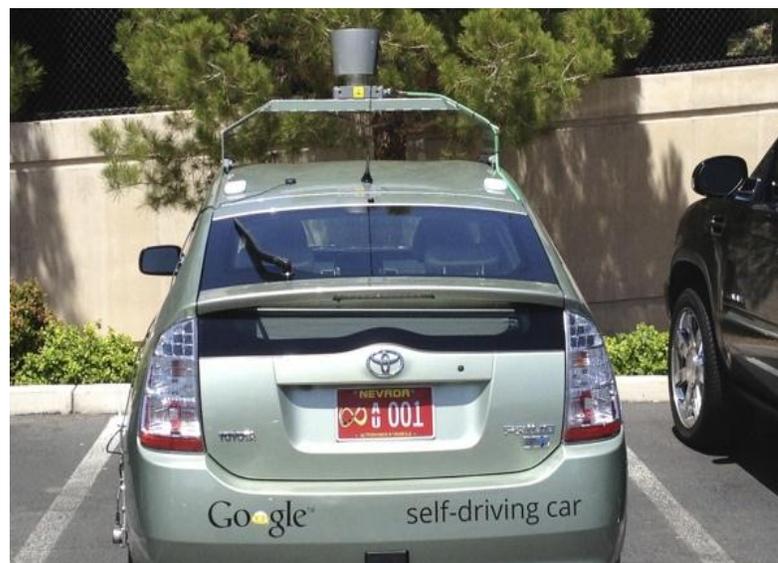
brain (see the little black box on top of her head with the wires coming off of it) which is controlling a robotic arm so she can sip her Coke.



**Figure 5: Direct Brain Control of a Robotic Arm**

You can imagine what this might do to someone working on an assembly line, or even more relevant any kind of lab or knowledge work where connecting directly to the computer would be an advantage. I can see a future where we are connected by WiFi or BlueTooth, the brain sensor might be in a cap we wear rather than having to implant it in our brain. Though this interface we could use our iPhone (8 ?) or other computing device with just a thought. An incredible productivity boost, and no evil scientist or bad robot required.

Last (but not least) is **Driverless Cars**: This is one I am looking forward to as I have those discussions with my older relatives on if they should be driving or not. I hope when I am 80, I will not have to make that choice and the cars will be able to drive themselves. Google which has driverless cars roaming around taking pictures for [Google Earth](https://www.google.com/earth/), already has one of these cars licensed in Nevada.



**Figure 6: The First Licensed Driverless Car**

Although this might be a boon to aging Baby Boomers this might also allow commuters to work on their way to and from work (a 2005 study from the U.S. Census says that 77% of us drive to work alone). I can imagine a world where your car drops you off at work, and you can call it whenever you need it, rather than having to take up expensive real estate by parking it. What will all those empty parking lots look like? What will they be used for?

6. **The Collaborative Conversation:** I believe that for the next 18 months there will be a window for change in the collaborative infrastructure in large organizations. These organizations are wiser now in the ways of collaboration, and have already paid for a [SharePoint](#) or [Notes](#) infrastructure that cost them Millions yet is not delivering on the promise of collaboration that they were sold on.

At the other end of the spectrum, there are collaboration applications you can get either for free, or for very low cost (as an app for mobile) that do many of the things the collaborative infrastructure do, but they do it in the cloud, and they do it more intuitively and cheaply.

It is this knowledge of these possibilities weighed against old collaborative infrastructures that creates an opening for collaboration vendors, as the enterprise will listen to their offers, where in the past they would not. But this window will close quickly as specific collaborative solutions become more popular, and the majority and laggards jump on this bandwagon.

We are now offering a service that deals with this opportunity for collaboration vendors, please see <http://www.collaborate.com/prod-2/vendorprogram> for more details.

7. **Everything is Connected:** Although this is apparent to me, I guess it is not to everyone. I mean this in both a philosophical sense (we are all connected to each other) and a literal sense, where nano-sensors are on pretty much everything and they are all broadcasting data at you. Not only can it be overwhelming, but it also brings into question the idea of identity and certainly gives privacy and security officers' new things to worry about. You would always know what inventory is in stock and where it is, you would know where everyone you work with is, and if given access, what they are doing.

Think of it as an activity stream with not only people but things! We see some of the early steps in this direction today with the Internet and mobile devices, but things (all sorts of things) will become more connected. Imagine a jacket that scans your body when you put it on, and can relay the data to your doctor, so if something is wrong we know about it right away, and then can use specially programmed nano-bots to correct the damage

8. **The Networked Organization:** More and more I see companies struggling to get the best talent and to keep them. There is nothing more important to a business than a great employee! But with only 3% of Baby Boomers left in the workforce, those just coming into the workforce have very different expectations about work. Often they will work as an employee for a while, and then with some experience and expertise they will go out on their own. Because we are so

connected, they soon find others like themselves and form an entity (a small business) and to keep ahead of the competition they may focus on something very specific, but be the best in the world at it (creating CAD drawings and instructions for a 3D printer to print out a more efficient part). These groups tend to form around a core business like satellites (see Figure 7).

The core of the company may only be comprised of a few hundred people including management, marketing, maybe operations or R&D, but everything else can be outsourced to these satellite service entities that have long term relationships with the core organization. I do this today: I have an accountant, a lawyer, and colleagues I can call on when I need their particular expertise. This will require better external (outside the core) collaboration software, sometimes optimized for the process the satellite organization is part of.



**Figure 7: The Networked Organization, small core with satellite service relationships**

9. **Personalization and Customization:** Henry Ford was once quoted as saying “sure, you can have any color car you like...as long as it is black.” That was the industrial revolution, where everyone got the same thing and businesses were made on economies of scale. Today just the opposite is true, no one wants to be the same; they all want to proclaim their individuality. Look at the stickers on people’s laptops, or the popularity of tattoos. They all mean I want to be a bit different, I am an individual (and often convey some content information about them i.e. they ride a Harley Davidson).

Add this to some of the other trends discussed above and you have a world of personalization and customization. You don’t have to buy the same iPhone protective case as everyone else, you can send in a picture of your dog, or kid, and have it printed (3D) into a iPhone case built to

your specifications, and unlike any other (see [mycustomcase.com](http://mycustomcase.com)). When I had a new Mini Cooper built, I was able to track its progress through the factory; you can now do the same with your iPhone case.

But it is not just things that will be customized; it will be interfaces and even different types of collaboration. For example many application interfaces today will let you move tiles of functionality around on the page so you can optimize it for the way you work. You can customize your workspace (both real and virtual). No longer is it you can only get black, today it can be purple, and tomorrow topaz. We are beginning the age of individual manufacturing, which has broad implications for all of business.

10. **Collaborative Reputation:** People are social creatures. How many social networks are you part of? Organizations are also (first and foremost) made of people. But organizational structures are also changing and along with them roles and reputation. In the new organization, it is a meritocracy, i.e. you have to earn your role, and you don't just get it through a promotion or attrition. You also need to understand what the role means and what your responsibilities are to those you collaborate with. This means your reputation as someone good to work with, who responds quickly and thoughtfully, who listens well, is appropriate in their sharing with others.

There are a whole cluster of skills that go into someone who is good at collaborating. Most of them can be taught, but you first have to understand how good a collaborator to see yourself to be, and then compare that to how others see you. This requires a metric which I call "Collaborative Intelligence." It can be used by an individual to see where they are in relation to others, or maybe it is a score you want to look at before you work with a person or group of people. More and more those coming into the workforce from college are looked at not just for what they know (content), but how well they share, work and collaborate with others. This means your collaboration reputation is critical. It can help promote you and get you the team you want to work with, or it can hold you back.

If you want to know more about the "[Collaborative Intelligence metric](#)", please look at this blog.

*David Coleman has been following collaboration for the last 25 years; which gives him a unique perspective. He works with both collaboration vendors and end user organizations to help solve collaboration challenges that are common to both populations. You can see his new web site at <http://www.collaborate.com/prod-2/> (before it is public) but once public it will still be [www.collaborate.com](http://www.collaborate.com). David can be reached at [davidc@collaborate.com](mailto:davidc@collaborate.com) or 650-342-9197.*