

Why Architects become gods

The evolving of the "Overnet" Meta-Reality

The often quoted but never really achieved "cyberspace" of Neuromancer [Gibson 1984] was always an aim for computer-enthusiasts (along with others, such as the development of artificial intelligence -AI- and quantum computing), an icon for movie-makers and utopistic vision for many. Movies like "Johnny Mnemonic"¹ and "The Matrix"² showed how (in their, timed context) this "cyberspace" could look like. Movements in between the Internet experts developed VRML [The Virtual Reality Modeling Language] (as an analogy to HTML – Hypertext Markup Language) to enable its three-dimensional usage. Nothing of this developed as predicted, VRML failed (became obsolete and succeeded by the unsuccessful X3D), things went different. The "cyberspace" has formerly been envisioned as a rather sterile and sparkling artificial space, seemingly created by computers FOR computers. A mixture of contemporary style and fashion (eighties "digital style" and glossy surfaces) made the cyberspace appear as "hyper-polished" and "overexposed". This made "real" people feel uncomfortable and the vision rather unpleasing (with the exception of some computer "Nerds").

Although AI and quantum computing are making proceedings in research, "real-life" applications and results for the end-user seem (yet) non-existent – unlike the "cyberspace", which constantly and seemingly unnoticed unfolds into reality, its seeds disguised in the shape of navigation devices, computer games and web-applications.

The Internet nowadays is, at first, a means of communication. Created by scientists [History of the Internet], without ambitions to be "nice" or "designed" it had to be simple, reliable and basic in its functionality. As a means of exchanging scientific data worldwide without need for extensive literature research, the Internet boosted research speed in many scientific fields. Its easy structure is still the lowest layer it consists of, the hypertext protocol (HTML). HTML serves as a basic framework for the creation of Internet-sites. Often misunderstood, HTML is no programming language, but a descriptive language. This means it is far from being a sophisticated tool to create digital content. Basically, HTML doesn't much more but dividing and zoning content

1 Director: Robert Longo, Tristar Pictures, 1995

2 Director: Wachowski Bros., Warner Bros., 1999

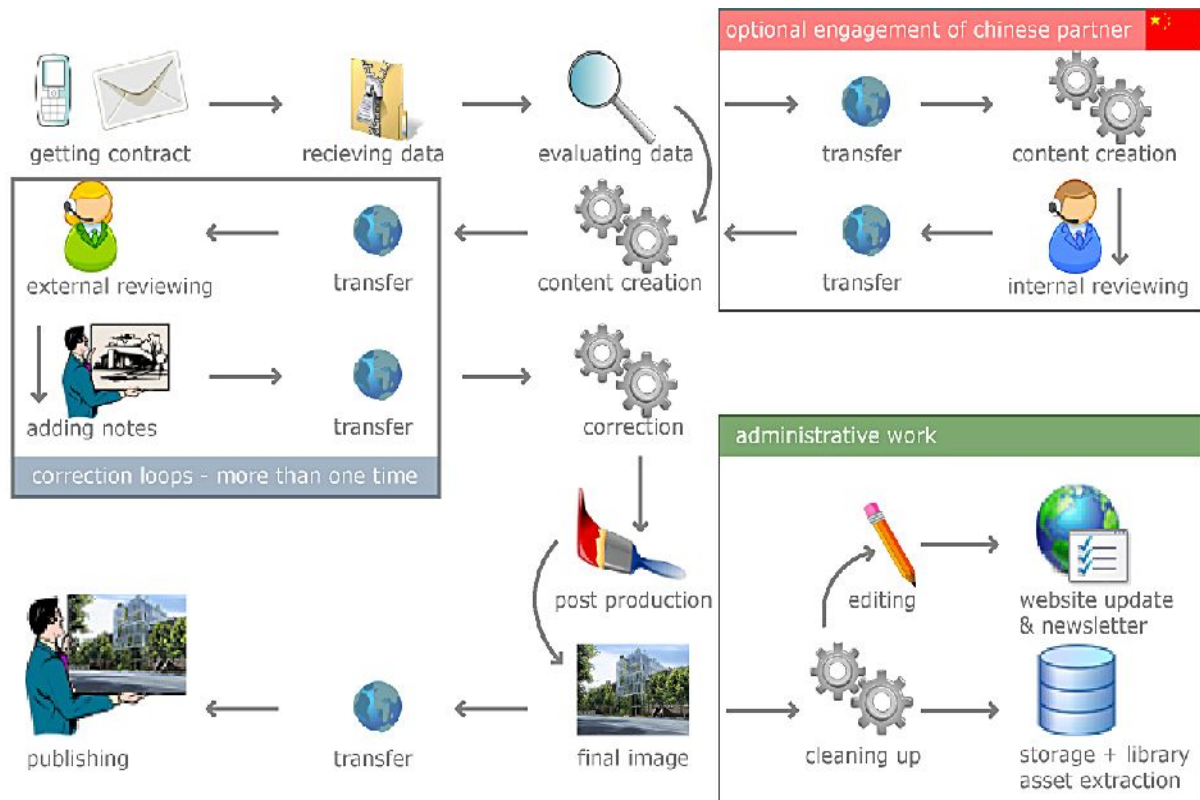
therefore its easy to understand, learn and "read", even for non-programmers. Below all fancy Flash-animations [Adobe Flash], PHP-generated [What is PHP] database-served AJAX-driven Internet-sites [AJAX] nearly everything still is based on the old HTML-Framework.

Another meaningful application became e-mail, a replacement for fax (which is now obsolete). This is status quo for most of the users of the Internet. Lets forget about all the new applets like instant messengers, RSS-feeds, etc. for now, as they just transform communication into another outlook and don't deliver any new findings (with the exception of video-communication). This could be seen as the foundation for the transforming Internet on its way to the future.

Lately, Managers and IT-Professionals talk about media-convergence [Debate: Will Web and Television Converge?]. What they mean is the (currently already taking place) multi-media-cross-connectivity of devices. In its infancy past, the Internet has been accessible only by telephone-plug, using analogue modems. Then came ISDN (with no real speed-benefit at first) later DSL. This multiplied the speed and bandwidth, bringing up animated websites, larger imagery and even movies. The "media-convergence" now merges carriers such as TV-Cables [Internet Television], Electric Cables [internet access via electric grid], "Long-Range"-Radio [UMTS Protocol], "Mid-Range"-Radio [WLANA] and "Short-Range"-Radio [Bluetooth]. Satellite uplink for end-users is now available and becomes affordable [Satellite Internet], so you could even sit on a yacht anywhere on this planet and be online. Instantly. In fact, now it doesn't really matter which media you use, anything can connect you to the Internet. This broad availability and accessibility could be considered a further step towards the upcoming, mature Internet.

Taking this media-developments as given, the workflow of many companies got massively influenced. It doesn't matter anymore where you are, as long as you got connectivity and are of full consciousness.

Even small companies start working worldwide, seeking for collaboration-partners beyond their time zone. The time shift is becoming something desirable, place your orders in the evening (in Europe), get the results the next morning (from China)!



“Workflow of a visualization studio” - Image Source: Author

The workflow of my visualization-company (in example) is totally different from the one some years ago. Where in former times a typical working day had 8 hours, it now exceeds 16, if you want! The images delivered to the client (who may currently be in a meeting in abroad) are sent via e-mail onto his UMTS-Notebook, with latest changes implemented. Knowledge Management tools, such as WIKI's [Wiki], help collaborating between timezones and ensuring corporate quality levels, even when working with freelancers from other continents and cultures. This is still status quo. Now we will slightly move into the future.

By beholding the Internet at its peripherals with a broader perspective of the IT-Industry (that is desperately searching for new applications for their all-new hardware) – it's "too powerful" for most standard tasks (in case you are an average user, using mostly office

software and browsing the Internet, exception: 3D-gaming). The automotive-industry is integrating more and more IT-Elements into their cars, making them computers on the road [Automotive Buses]. It can be estimated, that (full, not hybrid) electric cars will be on roads in near future [Teslamotors]/[Chevrolet], making the combustion engine obsolete and eventually creating completely electrical means of transportation. The Citroen C6 features a head-up display [Citroen C6], so does the new Corvette [Dupont] and BMW [BMW head-up display]. These head-up displays enrich your view onto the road (the reality) by projecting additional information i.e. about your current speed. In the future, speed-limits, navigational information and other (important?) things will be integrated here. Navigation systems tell you where to go, the latest generation even with 3D-visualized content (still inside the dashboard) [3D Navigation]. Not long ago, the first fridge with a TV and Internet-Access emerged on the market [Internet refrigerator], Apples iPhone boosted the popularity of smart-phones and brought Google-Maps onto our palms [iPhone 3G]; intelligent houses know when to turn on the heater or turn off the lights [Intelligent Houses].

By simply connecting these features, applications and marketing rules it seems obvious that any electric device (car, house, fridge) in the near future will be connected to the Internet. Most important: Nowadays those devices are mainly offering one-directional access to the Internet – this will most likely change in the future. Meaning that your car, house, fridge, etc. will itself be part of the Internet by creating its own "entity" (website). The web-accessibility and usability of all these "entities" will have to be simplified and standardized – so one has to think of them as small web servers with a virtual representation in the Internet, their own "entity".

It seems necessary to explain the term "entity" in comparison to "identity". An "identity" is to be seen as a real AND virtual existence of "intelligent and autonomous" life. It's not important whether this "identity" appears in the shape of a computer game player using a so called "avatar" or as a "real human" in the real world. In comparison, an "entity" lacks self-consciousness and describes an "incomplete intelligence", such as representations of devices, websites, autonomous software, etc. An intelligent car in the future will have an entity, humans AND artificial intelligences (!) will have an identity.

BOTH "entities" and "identities" are united in the fact of having a "real-world-life" and a virtual co-representation of their existence in the Internet. Whereas entities will appear as rather static and passive islands in cyberspace and reality (exception: means of transportation), identities move around, "surf" and actively shape and consciously interact with others.

An interface, making devices configurable via their "entities", will have to be found and designed. Nowadays, small routers offer similar functionality, workgroup printers show a web interfaces – these devices are the pioneers of the upcoming "super-connectivity". These web-interfaces are "entities" in their childhood. The question "Why is this all necessary?" could arise at this point. Maybe it's illustrative to use an example at this point. Lets say you are out of home but forgot to turn of the coffee-machine, lost your phone and want to track it - or plan a trip and want to check the "health-status" of your car. What you do is, go into the Internet, connect to your device and configure or check its status. The current Internet, in its plain-text-form and navigation reaches its limit in terms of clarity – especially when adding this new "device"-layer. Keep this in mind, I will come back here later. Another aspect will have to be added before.

Lets now have a look at the trend to digitize the globe. Both Microsoft and Google currently compete (along with others) in delivering sophisticated, three-dimensional representations of the earth, incorporating buildings, "meta-layers" of information (geological-data, weather-data, entertainment and marketing-based informations) [Google Earth]/ [Virtual Earth]. The IT-Industry is thankful, as this 3D-style of presentation is the only way to bring their new computers to the limits (again with the exception of 3D-games). Already, many architects are working in the field of 3D-design, support game-development and navigation-software-development with their skills [Gamasutra].

What we will get is (in near future) a complete representation of the existing world, understandable for everyone, as its design will be made to match up with reality. This will be our "meta"-reality. What will this "meta-reality" be like? Think of it as an invisible, (pseudo?) intelligent network covering our "real-world". It will be accessible everywhere, giving information to everything you see (instantly in the moment you see it) and directly connecting to nearly every contemporary technical device.

Combined with currently existing and developing technology of the so called "augmented-reality" [AR] – remember the Head-Up-Displays – every person around the world will be able to overlay his view with additional information, geometrically enriched and in an "alternative ghost view", showing i.e. the companies website/ products/etc. while walking next to its building [How AR will work].



Image source: Author / <http://morguefile.com>

A completely new genre of computer-games will emerge, overlaying reality with virtual enemies, quests, monsters and so on. Role-playing games including real-life-people on one and virtual creatures on the other side can take place in the enriched-"augmented"-world (One can currently not be sure about legal issues concerning "schizophrenic" gamers running on streets and shooting with invisible laserguns at each other).

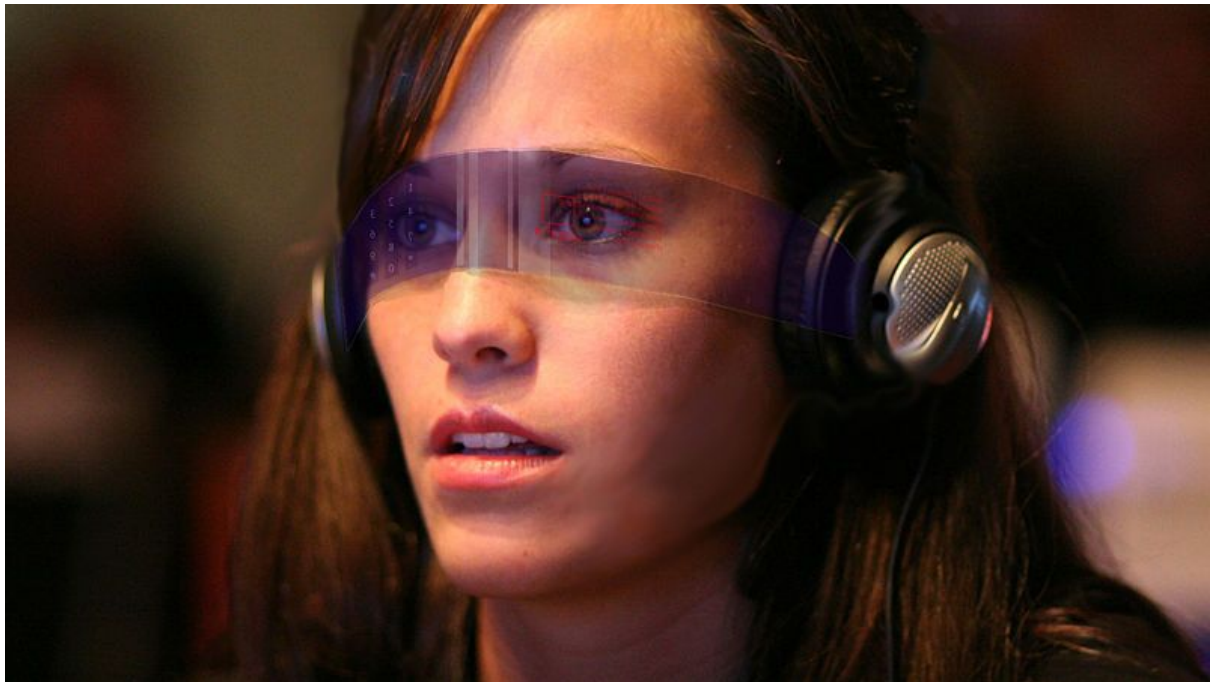


Image Source: <http://www.flickr.com/photos/leonardlow/310039863/> - Photograph by Leonard Low

How will an Architect present his design then? By showing paper-based plans on his workbench? Powerpoint-Presentations with a projecting device? This is how it works today – in future he meets his client on the building-site, putting on his AR-glasses³ (or anything else solving the same task) and moving around the building as if it was built [UCL]. At first he won't be able to go inside the building or "walk upstairs" but at this point the augmented-reality-devices could switch to "full" virtual reality, showing all other details and locations currently not reachable on site [Future-Making].

Imagine the augmented reality as a layer over the real world. Wearing the appropriate devices (portable computers, glasses with i.e. retina projecting display techniques [HITLab Projects]) everything one sees "outside" exists twice, in reality and as its virtual overlay-representation. The first steps to this meta-reality is already done (i.e. with Google earth and certain navigational units), others will follow.

All this is connected to one major, background topic: Three-dimensional computer graphics. Emerged in the eighties, as high-tech- and high-cost products of the film industry (Tron⁴, Abyss⁵, etc.) found their way into design- and architectural offices.

3 AR=augmented reality, analogue to VR=virtual reality

4 Director: Steven Lisberger, Walt Disney Pictures, 1982

5 Director: James Cameron, 20th century Fox, 1989

Parallel to falling prices in IT, CAD-Systems and their heritage (CAD-visualizations) became more and more affordable.

Nowadays 3D-Visuals established a whole new generation of young architects that are rushing onto the market. Whereas conservative, "old-fashioned" architects still yearn for hand-drafted images the new hightech-3D-playstation-generation of students see 3D-modeling as replacement for traditional models and renderings [Wolf 2008]. Their future customers, while also growing up with console-gaming and special effects, will not even notice that there was a generation leap. Sticking exclusively with traditional modeling and planning techniques will soon appear outdated and obsolete.

This new generation of architects will be the first that won't depend on physics, material and cost anymore. Why? Because most of the "buildings" they'll construct won't be "built" anymore. They will not even be developed to be built. When in the past visualizations were static representations of real-world building-projects⁶, today serve as tools for design, evaluation and marketing they'll BE the project "ITSELF" in the future. Most buildings of the future will not even be buildings but virtual representations of "something", digital "entities". Companies, Countries, Topics, Websites, Game-portals, Gadgets, Widgets, Spam, Porn.

The "Overnet" and the regency of the new gods.

Lets go back for now to the gadgets and gizmo's we talked about earlier. Keep in mind the "meta"-reality and a sophisticated Internet, highly integrated (into everything) and with (nearly) unlimited bandwidth, everywhere accessible, in 3D. Imagine this as a sort of "second" or "parallel"-universe, transcendent and visible only for the "plugged-in" [Simmons 2003].

As already mentioned, the "classic" design of the Internet is simply shaped and easy to use, but limited to its current interfaces and outlook. It is a two-dimensional text-based representation of information. But human thinking and recognition works in more than those two dimensions. If you'd like to control your "coffee-machine entity" in the Internet – how would you probably do it (without thinking about it too deeply)?

6 See Karf Friedrich Schinkel, 1781-1841, german painter and architect as a reference

You would like to fly into your "virtual house representation" and "go" to your coffee-machine, and "switch" it off.

You would not like to type this (fictional) string into a console window:

www.gotomyhome.net/us/il/chicago/21st/n202/appt1/kitchen/coffeemachine/interface.vr

(and enter a username and password afterwards), would you?

Where does this lead us to? We (most probably) will be in need of 3D-interface-designers, 3D-architects, 3D-artists, 3D-everything. Think about the way a company would represent itself in this new Internet: The "Overnet". Do you think this will be traditionally done, with a "building", following traditional building rules and design?

Maybe in a first phase (to make it easier for "us" older ones– but maybe not).

It would depend on the companies products and philosophy. To illustrate future possibilities try to think about what happens to formerly imperturbable physical dimensions: When moving inside the real and augmented world, we are bound to gravity and physics, to real-world dimensions and our moving speed (which is determined by the vehicle we are using, if doing so). Navigation in the real and "augmented" world is therefore nearly identical to what it is now. In the "Overnet", all of this is irrelevant, there won't be a "big" or "small". You enter a house (?) and find yourself in a whole new universe (if you want to!). Think of the effect Tommy Lee Jones and Will Smith experience at the end of "Men in Black II" when opening the door in the last scene⁷. They see their own world just as a "world in a box", among thousands of others – a "universe in a nutshell" as a "pocket universe" inside a "multiverse".

Who do you think will create, design, shape and style this, as I call it, "Overnet"? Programmers? In many parts, yes. Marketing People? Of course, business has always been a major motivation for many things! Sociologists? Sure, in special cases they will be asked. But in many (most?) cases it will be architects. The *NEW* architects. They are the ones with a perspective broad enough to understand a range of disciplines, such as engineering (the technical aspects), design (the aesthetic part) and functionality (how do I use it?).

⁷ Director: Barry Sonnenfeld, Columbia Pictures, 2002

Think of Vitruvius, with his claim "firmitas – utilitas – venustas"⁸. AND: They have been taught to do so, even when things get complicated. Most probably a new discipline emerges, the "virtual-architect".

A whole lot of research homework waits to be done until the "Overnet" will appear. The human-computer-interface topic needs to be discussed, as the traditional "screen-keyboard-mouse" interface seems to be obsolete [1954 Home Computer]⁹. Possibly cybernetics will have a breakthrough the next years and direct brain-interfaces could be possible [Technology Review].

This leads to another phenomenon that will inevitably emerge during the next decades: Robots will finally populate our houses, streets, etc. after already having conquered certain areas of factory production. The development of robotics has always been interconnected and somewhat dependent and influenced by advances in computer science. Whereas formerly "human robots" have been envisioned as integrated and autonomous systems (carrying their "brains" with them, in analogy to humans), this may not be their eventual appearance. One main problem in robotics (when thinking of bipedal, human-style robots) has always been a lack of computational power – the mechanical parts, including all necessary sub-modules, sensors and energy sources already need large amounts of precious construction space. Placing a really powerful computational module (incorporating artificial intelligence) inside a robot will therefore be a challenge (if not impossible) for quite a long time.

Going some steps further into the future and connecting the idea of the "Overnet" to robotics could end up in getting avatars of artificial intelligence, "identities" from the "Overnet" inside the real world! A perfect mirror of what happened before with humans moving inside into the "Overnet".

Imagine an existing "Overnet", with "entities" and first breakthroughs in applied AI. The first AI's will be dependent on large computer arrays, they will require massive amounts of processing power – too much to be placed into a mobile object - such as a robot. The solution will be to create "thin clients" – in analogy to contemporary "terminal

⁸ Marcus Vitruvius Pollio, *80-70BC - †15BC, roman writer, engineer and architect

⁹ (hoax!) showing romantic anticipations of future home computing in 1954 - in a plausible way

computing". "Stupid" machines, equipped with a simple "BIOS"¹⁰ but driven and controlled by exterior intelligence, remote controlled by powerful artificial intelligences, digital "identities".

This perfect analogy lets mankind behold its own children eye to eye, placed into a working universe (that is the reality), mirroring all that happens into the meta-universe (that is the "Overnet"). The danger of this co-existence with a possible, upcoming rivalry between the "human-" and "digital identities" is obvious and already been a major topic in literature and resulting Hollywood movies¹¹. To counter this challenge, Visionary Isaac Asimov defined his "three laws of robotics" [Asimov 1942] that should serve as an analogy to the biblical "ten commandments":

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey orders given to it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

At the latest now seems clear – the way of mankind towards the status of god(s) appears preordained. Even the *WAY* of this genesis seems to be an analogy to the biblical one. Remember the creation of the universe, its plants, animals and finally of man – transfer this to the creation of the "Overnet", AI's - and finally robots.

Conclusions

Architects will be gods, because they will be the *first* ones that create, design and shape the "playground" on which "new life" will take place. They won't have a monotheistic position of power, their dominion will mainly be the "appearance" and "look and feel" of the new universe. The "Overnet" itself won't be a monolithic and static construction, but rather a decentralized and dynamic organism, similar to the structure

¹⁰ BIOS = Basic Input Output System, mainly known from personal computers

¹¹ I, robot – Director: Alex Proyas, Canlaws Productions, 2004

of the Internet today, constantly evolving and reinventing itself. It will be democratic at a very basic level – with all the advantages and threats this offers.

What can we do today, while accepting this development and wanting to face the future-vision with confidence and joy?

Observe, think and act: Only by constantly observing new developments and a conscious adaptation to (the right!) new trends we'll (as architects or non-architects) be able to co-operate and co-shape this new universe. Toolkits and opportunities to do this will emerge for everyone, in due course. Great responsibility lies in the will and capability to enter this opening doors – there is no excuse for staying back and letting things develop by themselves. If we want to be part of the creation-process, we have to be ABLE to create and not fall back by pretending to be "too old" and "obsolete". The current "Generation 50+" benefits a great luxury by being able to do so. Everyone younger than this can't allow her-/himself to do it. Neglecting new technologies and letting others use them is giving power deliberately away – it's the same as neglecting elections.

As a result, an immediate action could be to take a closer look on recent developments in 3D-graphics and the gaming industry (especially MMORPGs¹²). I am not telling everybody to work in the gaming- or 3D-industry. BUT: Their advances form the future, so it's more than necessary to be at least – informed.

12 Massively Multiplayer Online Role Playing Game – such as World of Warcraft, etc.

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