

Travelogue

Tales From The Vapourtrail

In the computer industry, vapourware is a product, typically computer hardware or software, that is announced to the general public but is never actually manufactured nor officially cancelled.¹

1. "Vaporware". Wikipedia.
<https://en.wikipedia.org/wiki/Vaporware>, retrieved 10 March 2016.

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One element that all the projects in this publication have in common is that at some point in time, they relied on little yellow envelopes magically appearing in the mailbox. Repeatedly receiving small packages that have been sent overseas after ordering products online, made us curious for the possibilities that the source of these packages would offer in terms of making and researching alternative communications technologies. Therefore, we thought it was important for us to visit the People's Republic Of China and explore the Guangdong province, also known as 'the factory of the world'.



The motivation for the trip was also directly related to working on Meshenger (p 8) and various other radio prototypes (p 46) that exam-

ined 'infrastructureless' networks and alternative communications devices. Specifically we were speculating on the concept of peer-to-peer (p2p) communication and designing devices that communicate from device to device. If anywhere, such alternatives would not be found within the ways of making in the West, where products adhere to strict standards, regulations and pre-conceived uses. As part of our study, we saw the need to physically visit the sites of production where different modes of production are commonplace.

So as a semi-naive point of departure, the goal of the trip was to manufacture a phone. Naive because obviously we wouldn't accomplish that. Semi-naive because we KNEW we wouldn't accomplish that, but we didn't yet know why. At the same time, we understood that posing as a start-up would (literally) open doors, show new paths to deal with the subject in a more informed way and give us a sense on how communications technology is produced, distributed across the world and eventually recycled.

To frame our investigation we borrowed a concept used in social geography known as 'The Blue Banana'. It refers to a shape that emerges if one were to take a blue marker and highlight an area on the map of Europe which covers the highest concentrations of people, money and industry. The resulting

elliptical, banana-like shape would then stretch from England through western Germany, all the way to Northern Italy. Loosely following the shape of the river Rhine, if that river were to extend from Venice to Manchester. In the area one would find major cities such as London, Amsterdam, Rotterdam, The Ruhr metropolises, Frankfurt am Main, Munich, Milan and Venice.

For us there was more to the concept of The Blue Banana than just a curiosity. We used it to direct our focus on p2p infrastructureless networks, since the area described by the blue banana would also afford the necessary population density for said p2p network(s). At the same time 'The Blue Banana' has a peculiar quality to it, which became a guiding element for the visual design. Dreaming

up a phone that somehow worked differently, but also looked the part. What would make The Blue Banana phone different is, first of all, a different appearance. 'The Blue Banana' could aesthetically contrast the ubiquitous black box rectangles that constitute 99% of mobile phone designs. In addition 'The Blue Banana' could invert the traditional telecommunication structure and instead of relying on the standard 'cell' network service provider, it could have it's own type of wireless transmission. Perhaps something as simple as a walkie-talkie embedded into the device, so that we could use it for our own transmission standards. After drawing some initial sketches, we began to search for components and parts that could form the basis to re-configure a mobile phone into a Blue Banana communication



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device. Specifically we focused on www.alibaba.com, the popular online portal that connects Western techno-consumer desires with Eastern manufacturing and which is valued at 189 Billion USD.



On www.alibaba.com we stumbled upon a range of companies that produce so called 'rugged' phones. These phones are 'military grade', heavy duty and water/shock/dust proof and seem to be 'inspired' by the 'Caterpillar' rugged phones.² These phones were interesting to us because they had a 'walkie-talkie' functionality, in the form of an extra, general purpose, radio transceiver. These products are shanzhai (山寨), a term which here in the West, evokes nightmares of low-quality fake iPhones. Increasingly however, scholars from the region are starting to view the style of production

linked to shanzhai as a de-facto open source means of making hardware.

This attitude towards production, that involves a common disregard of intellectual property and regulation leads to fast paced collaboration and countless designs, each one mimicking and bettering another with endless improvements and new features. Even when concepts are being copied or 'borrowed' for new designs, inventive (novelty) features are often added. In the case of the shanzhai rugged phones, the innovation on the original is the addition of the extra radio transceiver.



This distinction between mere copying and adding to the original design is also described by Andrew "Bunnie" Huang, an American hacker with a Chinese background who compares shanzhai production to mash up culture on the web:



Blue Banana phone features

Their ability to not just copy, but to innovate and riff off designs is very significant. They are doing to hardware what the web did for rip/mix/burn or mashup compilations. The Ferrari toy car meets mobile phone, or the watch mixed with a phone (complete with camera!) are good exam-

ples of mashup: they are not a copies of any single idea but they mix IP [Intellectual Property] from multiple sources to create a new heterogeneous composition, such that the original source material is still distinctly recognizable in the final product.³

2. "CAT rugged phones". <http://www.catphones.com/en-gb>, retrieved 10 March 2016.

3. "Tech Trend: Shanzhai". Bunnie's Blog. <http://www.bunniestudios.com/blog/?p=284>, retrieved 10 March 2016.

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Swell Factory front door

This gives rise to products unseen in the West, in part because this represents a non-western mode of production, in part because these products are not oriented towards Western markets.

To plan our trip we began eagerly contacting some of these companies as potential customers looking to develop a prototype to see if we could arrange appointments for factory visits. After many polite dismissals we eventually managed to arrange a factory visit with the Swell Technology Company ("So Well life").⁴ Excited about the prospects of shanzhai as an inspiration for technology that is 'weirded' and breaks conventions, we planned to visit electronic markets in both Hong Kong and Shenzhen to gather components to build our devices. At the same time we were on the lookout for potential collaborators; institutions, hacker spaces, collectives and individuals who would be interested in helping or facilitating this trip. At the very least to assist us with the language barrier.

Like so many clueless and stingy (or shall we say, cost aware) Western travellers we ended up booking a 'room' in the Chung King Mansions. The Mansions are a group of five 17

storey buildings which house many guest rooms and are situated at the center of the Kowloon area⁵, surrounded by fancy stores and malls. These tiny guest rooms all have names designed to appeal to Western travelers, such as 'The Germany Hostel', 'Canadian Hostel' and we ended up staying in the comfort of the 'Holland Guest House'. Upon arrival, when entering the slightly daunting mall that covers the first two floors of the building we immediately noticed many small stores selling a variety of mobile phones and other electronics. Once we found our way to the room, probably like so many other Western travellers, we felt a relief to have escaped the cacophony of market traders downstairs and found ourselves anticipating what the building had in store for us.

After finding our feet we discovered that, by sheer coincidence, we were located in a very interesting spot. The anthropologist Gordon Mathews has researched and published extensively on the Chung King Mansions, describing the people that live and work there and the role the building plays in the global technology trade. He considers Chung King Mansions as the hub of 'low-end globalisation'.

4. "Shenzhen Swell Technology". <http://www.cnswell.com>, retrieved 10 March 2016.

5. "Chung King Mansions". Wikipedia. https://en.wikipedia.org/wiki/Chungking_Mansions, retrieved 10 March 2016.

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Globalization not at the hands of multi-national companies but rather

[...] globalization done by individual traders carrying goods in their suitcases back and forth from their home countries. That's the dominant form of globalization here and that's how globalization works for 70 percent of the world's people." Furthermore Mathews estimates that in 2008 "up to 20 percent of the mobile phones recently in use in sub-Saharan Africa had passed through the building at some point."⁶



14-day phones, made in China for the Dutch market, end up back in Hong Kong

At the time, these phones must have been the so-called shanzhai phones, whereas now we would find mostly the familiar black rectangles and iPhones. Probably because "many of the phones sold today are 14-day phones: phones which were returned by European customers within 14

days of purchase, which retailers buy at a discount and sell on."⁷

To Dutch travelers like ourselves another aspect of 'low-end globalization' became apparent when we frequently encountered Dutch powdered milk formula in many stalls throughout Hong Kong. A considerable amount of this powdered milk is bought by Chinese individuals living in the Netherlands who independently export Dutch powdered milk to Hong Kong. This kind of informal trade occurs alongside traditional business to business exports. These individuals are known to move from supermarket to supermarket to purchase the powdered formula, leaving empty shelves in Dutch supermarkets as a consequence. In Hong Kong the milk is then sold at a substantial profit to Chinese citizens from mainland China, who due to food safety concerns, distrust locally produced powdered formula.





Dutch supermarkets have noticed the trend and subsequently implement restrictions on how many items one can buy, sometimes only imposing this limit to Chinese customers.

Hong Kong has changed quite a bit since one of us last visited in 2011, or perhaps, it wasn't Hong Kong that

changed but the goods on offer in Sham Shui Po (Hong Kong's infamous electronics district). In our search for strange, non-standard electronics that used to be widely available, we found only few. Our techno-orientalist hopes and expectations for obscure and uncommon electronics weren't met, as we saw

6. "Inside Chungking Mansions with expert Gordon Mathews". CNN. <http://travel.cnn.com/hong-kong/life/inside-chungking-mansions-expert-gordon-mathews-098440/> , retrieved 10 March 2016.

7. "Chungking Mansions: Inside Hong Kong's favourite 'ghetto'". BBC. <http://www.bbc.com/news/world-asia-24015987>, retrieved 10 March 2016.





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so many of the familiar black rectangles, but in larger quantities. One of the reasons for this could be that the growing wages in China have created an expanding middle class, the Chinese no longer look for the fakes as they are increasingly able to afford and purchase the real thing. Another explanation of this phenomenon can be found in a paper by Lindtner, Greenspan and Li on the development of shanzhai and maker culture in which they argue that

shanzhai isn't gone, it just became more 'mature' and professionalized, oriented less towards niche markets and more towards main stream markets. Take for example Xiaomi, a manufacturer with shanzhai characteristics that has now become a large multinational company that specializes in 'normalized' devices, uses professional branding and is no longer associated with shanzhai.⁸ When it comes to mobile phones, shanzhai items have become in-



creasingly slick, professional and visually stylized. It becomes difficult to distinguish a shanzhai from a regular device, since both use the same visual language. However, there are still many curious items and products to be found such as USB to TRRS connectors, rear view mirrors with integrated android devices and brightly coloured powerbanks.



After a few days of going places and meeting people in Hong Kong we took the train to the border with Shenzhen. We ended up staying in a neighbourhood called Dongmen (东门), or East Gate. Unknown to us at the time the area is infamous for clothing and fashion retail. Everything in the neighbourhood is oriented towards shopping. To reach the Luohu (罗湖) metro stop one is routed through an underground shopping



mall. The signs snake through the mall and following it forced us to walk in circles and get lost. It was then we were able to take a closer look at the wares on sale and noticed an abundance of T-shirts with confusing English quotes on them. These were not only 'Chinlish' spelling errors, mis-spelling as a consequence of literal translations but also, as we later learned, deliberate 'mistakes' that were an aesthetic decision by the designer. This in contrary to the abundance of misspelled, or better yet, 're-spelled' names of famous brands to avoid copyright infringement. In a way these can probably be considered a shanzhai

8. "Designed in Shenzhen: Shanzhai manufacturing and maker entrepreneurs" Lindtner, Greenspan, Li. http://www.silvialindtner.com/s/Lindtner-Greenspan-Li_Designed-in-Shenzhen_2015.pdf, retrieved, March 10 2016.

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way of producing textiles, produced quickly & cheaply to follow the latest fashions and with large amounts of variations. In a way the decorative texts on many pieces of clothing sold by fashion companies in the West are often 'empty', devoid of any real meaning, working on a purely visual layer. Some of the shirts we saw in Dongmen pushed this logic to its essence, producing a result reminiscent of dada-ist visual poetry.

Ever since Andrew "Bunnie" Huang and others based in Asia that had resonance in the West started focused their attention on it³ the, Huaqiangbei (华强北) district has become somewhat legendary for the 'maker culture'. Lindtner, Greenspan, Li in their paper⁸ describe the ecosystem of companies and start-up

incubator programs that have sprung up in Shenzhen specifically to make the area accessible to westerners. 'Seed Studio', a hardware manufacturer that also works to make the Huaqiangbei district popular and accessible for startups and makers has even published a map of the area.⁹ Additionally there are numerous 'accelerator' programs based in the city. These programs produce hardware start-ups, complete with branding and kickstarter campaigns and backed with ambitious venture capital. The products that made it you've probably heard of, many however diffuse into vapourware.

The Huaqiangbei area consists mostly of interconnected malls and multi-storey markets populated by a very large amount of very small

9. "Shenzhen Map For Makers" Seedstudio. <http://www.seedstudio.com/document/pdf/Shenzhen%20Map%20for%20Makers.pdf>, retrieved 10 March 2016.



stalls. Instead of finding only retailers for neatly packaged, similar looking products, we found markets where any imaginable electronic item can be found and where devices are sold in various states of (dis)assembly.



The markets of Huaqiangbei are an eco-system that encapsulates both technological production, consumption and reclamation where one can witness the entire life-cycle of a technological product in a single shopping mall. One floor functions as a distributed assembly plant and another as a disassembly and recycling plant. From big to small, each mall also seems to have its own specialty; From selling stacks of complete devices to repairing, customizing or offering vast amounts of individual parts. The ground floors of each market seemed more focused on retail for consumers and function as a sort of interface to the floors



above street-level. When asked for certain components or a specific model, we were often directed to a company located on the top-floors that would act as a supplier.

During our stay in Hong Kong we were told that even in Shenzhen the trade and manufacturing of shanzhai devices was in decline, and we were unable to find as many as we expected. One of the causes of this decline, in addition to the rise of the middle classes in China and the professionalization of shanzhai manufacturing, was the police force cracking down on fake or replica products. The devices we found were mostly 'dummy' show-models, non working empty

plastic cases, that were used for display purposes before being able to buy the real-fake thing.



The shanzhai phones we did find however, catered for a highly specific niche market. Phones with four SIM Card slots, extra large batteries doubling up as powerbanks, solar powered rugged phones clearly intended for very specific use cases. Others, designed as cigarette cases, were directly related to Chinese smoking culture ("you are what you smoke")¹⁰ and offer a more healthy alternative to an actual pack of cigarettes as a gift to improve your 'guanxi'.¹¹

10. "China's cigarette culture" China Daily. http://www.chinadaily.com.cn/china/2014-01/09/content_17226897.htm, retrieved March 10 2016.

11. "Smoking in China" Wikipedia. https://en.wikipedia.org/wiki/Smoking_in_China, retrieved March 10 2016.6-production-by-the-numbers-100-production-lines-200k-workers-540k-phones-a-day/, retrieved, March 9 2016.



The blurring of lines between obvious shanzhai products and more familiar looking 'Western' products is not so strange considering that the majority of electronics available in the West are produced in the Shenzhen area. For the shanzhai manufacturers to compete with the likes of FoxConn, the contract manufacturer for Apple, which produces 540,000 iPhones a day¹², there is no other way than to actively share their knowledge and materials amongst rival producers

and designers⁸. In the world of shanzhai there is no open-source, there is no closed source, these distinctions are irrelevant in a culture that hinges on competitive market advantage.

One company that produces innovative shanzhai is Swell Technology, who were nice enough to give us a tour of one of their facilities. We arranged to be picked up by one of their representatives in the expensive Sheraton hotel lobby, in the center

12. "iPhone 6 production by the numbers: 100 production lines, 200k workers, 540k phones a day". <http://9to5mac.com/2014/09/17/iphone-6-production-by-the-numbers-100-production-lines-200k-workers-540k-phones-a-day/>, retrieved March 9 2016.



of the Shenzhen business district, even though we were staying in a very cheap hotel in Dongmen. This representative drove us to the factory, located outside of the city in the more hilly north east of Shenzhen (the literal translation of shanzai is 'mountain stronghold'). Upon arrival, our roles as vapour merchants was underlined by the giant LED sign above the company's reception desk welcoming our arrival. The visit to the Swell factory became

an elaborate performance. Both us and the representatives from SWELL were both actors and audience at the same time. We were out staged by a well-rehearsed tour of the facilities. As we became the audience, disguised in mandatory pink anti-static clothes to be led around an expansive warehouse full of vacant and empty assembly lines. Dutifully, we purchased some factory samples, in the hopes of being able to write our own software for the extra radio transceiver in the phone. While going through the company's catalog of (unbranded) phones the mechanics of the economy that we were participating in became clearer. We, the interested buyer, were presented with a catalog of basic hardware models (gōng bǎn, 公板, 'public (circuit) boards')¹³ which can be modified for your requirements (gōng mó, 公模, 'public case').^{13, 14} Custom brand names, logo, packaging colors, materials anything you want, with a minimum order of around 300 pieces. This is where brand new products are custom made from re-assembled parts and anyone can leave with a fully configured product for wholesale.

The common attitude towards sharing and collaborating within the

13. "Shanghai and Disruptive Innovation" Anna Greenspan for The Globalist. <http://www.theglobalist.com/shanghai-and-disruptive-innovation/> retrieved 10 March 2016.

14. Chinese translation by Nan Wang.

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production is not limited to niche devices but also is applied to the ins and outs of mainstream brands such as Apple and Samsung. Everything from spare screens (in flavours "original", "high copy", "good copy") to complete electronic schematics, parts lists ("open bill of materials"³), solder stencils and reverse engineered manuals are available for public use. Mainstream devices such as the iPhone are arguably better documented in Huaqiangbei than in the West. However, this culture of openness is distinctly different from the open source software culture familiar to us in the West, even though it is frequently compared or even conflated with it. While we fruitlessly searched for the 'open-source'

boards known as 'gōng bǎn' in the markets of Huaqiangbei it became obvious that we were not in the right place nor did we have access to the communities and subcultures that would carry these 'open' boards. While it is easy to recognise similar patterns between open source Maker movements and Chinese electronic maker communities, the culture and ideology of making and designing of technology between these two continents is disparate and distinct from anything we were accustomed to. This was made explicitly clear after we purchased our radio phones from the SWELL factory and the companies confusion and distrust towards our continuous questions regarding technical documentation of



the hardware. Becoming part of this 'open' or ecosystem involves a long process of building trust and reputation in addition to understanding the specific social and cultural dynamics of the area. This issue of earning trust and gaining access to gōng bǎn and connections to produce your own devices has given rise to numerous consultancy companies targeted towards assisting foreign investors with Chinese manufacturers.



Most devices produced in the Special Economic Zone (SEZ) of Shenzhen are designed for export to foreign investors who, encouraged by

special tax incentives¹⁵, outsource a large portion of their production (and design) here. That also requires a supply of stickers for many recognizable official looking certifications like CE, FCC and Rohs which can also be found on the markets of Huaqiangbei. But there is another market relying on these holographic beauties, which are the shanzai products and accessories. After production, most goods, including iPhones, are directly shipped to Hong Kong which is the starting point for international trade. There is a lucrative market for these Hong Kong iPhones in China, because they can be bought tax free. This creates an informal circulation, not too dissimilar to the powdered milk from dutch supermarkets, where phones are first exported to Hong Kong, then bought by mainland Chinese, unboxed (to save space) and smuggled back into mainland China, where the 'Hong Kong iPhones' are sold at a cheaper price. According to the architect Liam Young, this results in a lively market for the production of shanzhai iPhone boxes. While we haven't seen the boxes, we have seen and collected all the stickers that would adorn these cardboard boxes.¹⁶

15. "Incentives to which foreign investors in Shenzhen are exclusively entitled". <http://www.by-cpa.com/html/news/20076/753.html>, retrieved, March 10 2016.

16. "The Geologic Imagination". Interview with Liam Young of Unknown Fields Division, 2015 Sonic Acts Press.

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We concluded our journey with an evening of presentations at the house of one of our contacts, Li Weiwei. She spent some days with us in Shenzhen to translate, show us around and invited us, along with some other artists, to talk about each others work. Most of the Chinese people present were western educated, working either as artists or in the broader cultural sector. This evening we had a conversation about the 'culture' of Shenzhen which many found was non-existent. This echoed other voices we heard during our trip. The city itself being 30 years old, was perceived by it's inhabitants as only a site of business and not one of culture. Culture is still regarded as something linked to history and tradition, the neighbouring 2000 year old Guangzhou being a case

in point. We would argue that shanzhai represents one of Shenzhen's own distinct cultures, akin to other bricolage ('diy') cultures but even pushing it into (industrial) design cultures. This idea however was rejected by the group, shanzhai still bearing the negative connotations of inferior quality and lack of originality in relation to Western products.

One site where one can witness tradition mixing with the new cultural production is in the so called 'Joss paper'. These paper craft artifacts are burnt as offerings in small shrines dedicated to deities and the recently deceased. Increasingly however Joss papers are made to represent contemporary items of value such as money, credit cards, houses, cars and also electronic consumer





technologies. These paper models have moved with the times to replicate consumer desires that are then offered to the spirits of the past. They represent items one hopes to attain during life, but which one receives only in the spirit world. In light of our trip, the Blue Banana phone reached a similar conclusion, becoming an effigy representing a set of desires and ideas on technology that materialized to nothing more than a few souvenirs from the vapourtrail.