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Tech giants – with a little banking on the side?

bergsicht

CHAPTER 1

Theory and practice

The irresistible decline of information and transaction costs ought, in the normal course of events, to reduce the size of firms, as the creation and survival of companies is a function of the interplay between external and internal costs: if it is cheaper to conduct an economic activity by establishing an organisation, then founding a company makes sense; if not, such activities will be carried out via external contracts and service agreements. Technological developments enabled by the internet, not least the opportunities afforded by big data and artificial intelligence on the back of ever-lower data processing/storage costs, have significantly altered the dynamics between internal and external costs. Theory based on the findings of the great American economist Ronald Coase (1910 – 2013) in *The Nature of the Firm* suggests that this change should have triggered corresponding changes in the structure of the corporate sector.

This is true to only a very limited extent, however – indeed, in some segments of the economy, precisely the opposite seems to be happening. And where is this most evident? Among the now enormous tech giants such as Apple (market capitalisation at year-end 2017: USD 869 billion), Alphabet (better known through its subsidiary Google, USD 727 billion), Microsoft (USD 660 billion), Amazon (USD 564 billion) and Facebook (USD 513 billion). These technology firms of various stripes have surged ahead of "conventional" companies such as General Electric, Exxon, Citigroup and Walmart that used to dominate the American stock exchange. The ocean of data at the heart of such firms is more highly prized and valued than any financial clout, oil well, technical expertise or physical distribution network. We shall also include the Chinese giant Alibaba in our analysis – it, too, is listed on the American stock exchange and currently boasts capitalisation of USD 441 billion. It continues to thrive with unprecedented vim and vigour, suggesting that predictions of the demise of the conglomerate – for similar reasons derived from corporate and/or financial theory – are greatly exaggerated.

Apparent or actual discrepancies with – largely uncontested – theory must surely appeal as an intellectual challenge to the sceptical observer. They also throw up wider considerations: the logical – and total – vertical integration of the new tech giants could result in the de *facto annexation of the money cycle*. Alibaba has already gone a considerable way down this route in China; the retailer Walmart tried it once in the USA but fell at a regulatory fence. But is such a development once again in the offing on the other side of the pond? Wait – "the other side of the pond"?! Apple, Microsoft and Amazon have almost the same reach in the wider world as they do in the USA – so are we soon going to be paying for our local train tickets with an $apple or an AmaCoin? What would that mean for our domestic monetary system? Are the global tech colossi set to wipe out national and supranational currency areas? Will private money compete with sovereign currencies? What consequences might such a development have for the next territorial matrix we can expect, as defined by blockchain? Or for the banks, who are already struggling to preserve their business model?

This *bergsicht* will raise more questions than we are able to answer from our present vantage point – but as we see ourselves as an early-warning system for structural change, we trust this will be sufficient. The high risk entailed by any venture into such unknown territory, whose disruptive nature could wipe whole sectors of the economy off the map, merits the timely mobilisation of the best intellectual resources; we feel that a period of intense reflection would pay dividends.

CHAPTER 2

In the palm of our hands – or in the palm of theirs?

We should not throw the baby of theory out with the bathwater, however; in a sense, firms *have* got smaller. You, me, literally all of us have become a kind of company. By using our smartphones to control processes that could once only be transacted in large companies thanks to economies of scale, we have become sole traders or freelancers. Booking a flight once required an organisation known as a travel agent; nowadays, I can use a platform to plan, book and pay for even complex journeys involving multiple connecting flights.

Take out your smartphone and have a good look at which processes we now manage for our own benefit in our privately owned company, "Me Inc.": a world of reference books (for which whole libraries were once required), a central meteorological office with competing weather channels, a multimedia complex with virtually unlimited access to films, books and newspapers, a casino, a cartographic cornucopia of land maps and sea charts, a firm of piano tuners, a telephone exchange with multiple switchboards, the field headquarters of an emergency call centre, an interface to a giant database known as the Cloud – and so on and so on. Up to 15 years ago, all we could do with the "brick" in our hand was make calls, transmit simple messages or send poor-quality pictures. Today, the power of the device we hold *in the palm of our hands* is almost overwhelming, and more overwhelming still is the way we use it so matter-of-factly; how skilled we have become at performing entrepreneurial tasks in our own best interests. Human adaptability is truly impressive!

Of course, behind all of the processes offered to us so we can do things off our own bat there lurk firms and organisations such as airlines, hotels, newspaper publishers and emergency services that base their business models on the system (or at least are constantly trying to transact more and better deals with us); this brave new world is by no means populated entirely by one-man micro-businesses. But the extent to which in-house processes are farmed out to the end consumer – and the consumer's willingness to internalise these processes at the most basic level – is quite remarkable. We paste up our own newspapers with the content we prefer and have thereby become our own features desk and editor-in-chief. We determine the goods that are offered for sale to us and thus dress shop windows to suit ourselves. We communicate with important people from our network of contacts multiple times a day and run our own marketing department via Instagram, Facebook and Twitter. We flog our old junk on auction sites like eBay and earn a few francs on the side – time was when we would have handed it over to an antiques dealer or dropped it off at a charity shop.

At the next level up on the entrepreneurial scale we find the small businessmen of Uber, Airbnb and similar platforms, who now number in their millions. By activating an asset they own (car, home, labour or time), they earn a crust that can often feed a whole family. This is the best acid test for the accuracy of any theory on the nature of the firm; hotel room versus Airbnb apartment – it is difficult to imagine a more telling example of the effects of lowered information and transaction costs. And what is the *sine qua non* for running an Airbnb apartment or an Uber limousine? A smartphone. The world in the palm of your hands.

There is a flipside, though. It's *all in the palm of our hands*; but does that ultimately leave us in the palm of Uber's (their competitors generate only a fraction of the market leader's turnover)? Or in the hands of Airbnb, the "hotel chain" that has little to fear from alternative platforms such as HouseTrip or HomeAway and now boasts some 4 million listings (beds?), leaving its competitors (Marriott, Hilton, Intercontinental, Wyndham and Accor, with their 3.9 million listings) in the dust? Or of Google, a living reference work, tailored to our every habit and need, that insinuates personalised ads with every search query and whose blandishments are so hard to resist? No other comparable platform has even come close to Google, except in those places where the latter is shunned or officially banned, such as China. Elsewhere, it is universally acknowledged that all good things come from Google. Netflix seems to be bucking for a similar quasi-monopoly in film streaming – and here a comparable universality reigns, except in those places where the service is explicitly prohibited. The world of the internet is extremely flat and this is all the more apparent with services that can be transmitted electronically.

Things ought to be different where the storage and transport of physical goods are involved; and this is indeed the case with Amazon, although it was not necessarily so back in the days when it was still principally operating as a broker between suppliers and enthusiastic online shoppers. This has long since ceased to be the case. With its highly granular knowledge of consumers' preferences and producers' capacity – not just in the USA but across vast swathes of the world – Amazon now operates an elaborate retail business, including warehouses and its own transport infrastructure (where, *nota bene*, the risks are not always shouldered by Amazon but are often hived off to third parties – an approach that is apparently part and parcel of any sophisticated logistics operation these days). Amazon employs more than 550,000 staff worldwide, achieving annual turnover of some USD 180 billion; but it has also attracted bitter criticism for allegedly paying some of its workers below-living-wage salaries. Jeff Bezos, Amazon's founder and majority shareholder, is currently ranked the world's richest man (USD 130 billion).

How can a company dealing with physical products (and exposed to the associated risks) achieve the same almost universal coverage as a purely virtual firm? Don't complexity and physical distance constrain expansion after all? Or to put it another way: what is the driving force that brushes such obstacles to growth aside, scarcely leaving competitors a chance to catch up with the likes of Amazon? Only Alibaba has achieved a similarly impressive position in the more or less self-contained Chinese market – and precisely the same questions arise with Alibaba, perhaps with even a shade greater urgency, as the conglomerate is far more complex still, encompassing everything from Alimama to Alibaba Cloud, from Tmall to AliPay, and far more besides.

We suspect that the *economies of scale* generated by companies like Amazon through deep knowledge of goods flows and a global logistics system are so great that Coase's theory of the nature of the firm no longer applies. Apparently, Amazon's logistical choreography has now become so advanced that, based on the probability of a given product being ordered, it parcels up and dispatches deliveries with no particular recipient in mind, only definitively addressing the orders *in transit* once the destination is known. The delivery path is thus transformed into a mobile warehouse, with corresponding savings on company infrastructure and resources. Such feats can only be accomplished by a truly gargantuan enterprise, where probabilities are reasonably accurate due to the vast number of orders in play.

Everything in the palm of our hands – smartphones make this dream a reality. And yet, in practice, a mere handful of exponentially-expanding, platform-based suppliers are now dominating the marketplace, offering more and more of practically everything; the number of counterparties with which our constant companion, the smartphone, has to interact is falling relentlessly. Will we eventually end up with an all-American UberAirbnbAmazonGoogle Ltd. and a Chinese AlibabaAll, reflecting the new bipolar balance of power in the world? And what is to become of us pitiful Europeans, us poor Swiss? Or are such territorially framed questions hopelessly anachronistic?

CHAPTER 3

From cradle to grave

According to a survey, 78% of households in the USA decorate a Christmas tree, 64% have an Amazon Prime Account, 51% go to church and 42% possess a firearm. While this may not flesh out the American sociogram in its entirety, it gives a flavour of how things stand: more than half of all Americans are regular Amazon customers. The Prime label doesn't come for free, but people hope to amortise the fee with transactions and free or 24-hour services, so they keep coming back to the platform. There are of course special offers and discounts to tempt them as well. More than half of all Americans! Such conditions are reminiscent of AT&T, when that monopolist still ruled the roost of American telephony.

You can order pretty much everything you need to live, thrive and survive from Amazon, and of course plenty more for which you would have no need whatsoever. There is a comprehensive range of services on offer: in addition to the millions of different items on sale, you can avail yourself of unlimited minutes of video streaming, consume pay-to-play TV, access music ("40 million songs"), read magazines and eBooks, manage your photos in the Cloud and even score a discount of up to 20% on nappies and baby food. The Terms and Conditions state that Prime membership is a "continuing obligation" which incurs a "periodic membership fee".

Amazon attempts to draw in unbanked individuals – and in the USA these include, in addition to younger people not in possession of a credit card, the semi-legal or illegal immigrants who nonetheless hold substantial cash assets – with its "Amazon Cash" service. Potential customers can set up a debit facility at the tills of partner companies such as food stores and the like. Credit facilities of up to USD 750,000 can be extended to suppliers via "Amazon Lending" and it seems discussions are ongoing with JP Morgan to establish an Amazon current account.

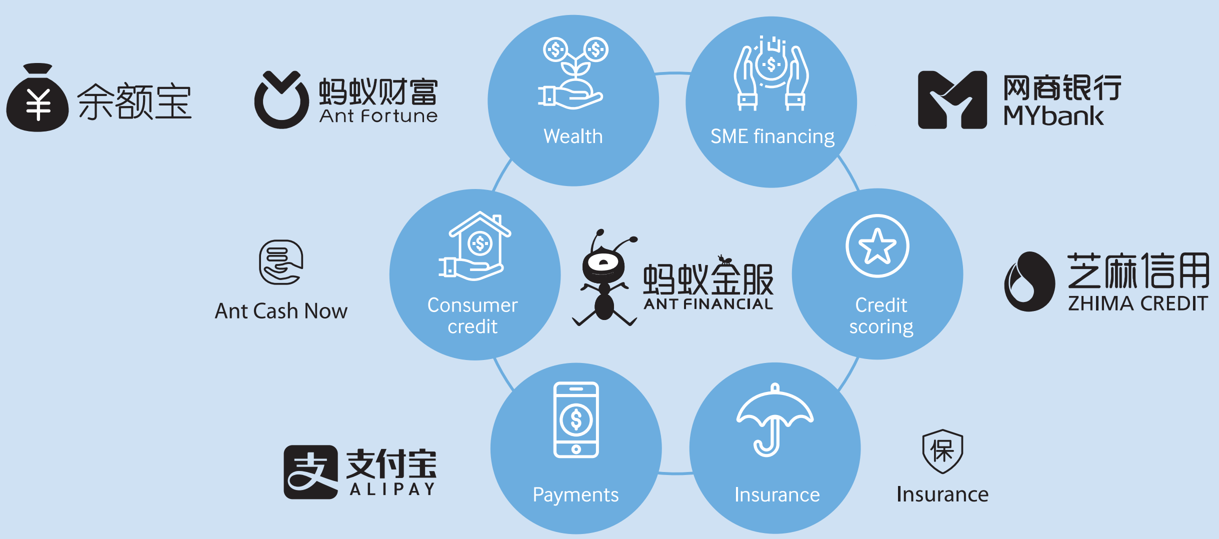
In other words, Amazon is nudging ever closer to financial services without explicitly committing to the move. Since Walmart's attempt, mentioned above, to park its tanks on the banks' lawn in 2006, the regulatory bar for the relevant licences (to set up an "Industrial Loan Corporation") has been raised; the banking sector in the USA is well protected by the "Bank Holding Company Act". The upshot of this is that none of the tech giants has yet managed to cross the Jordan to the Promised Land of banking – but they are certainly treading water in the middle of the river. And why are they so keen to break into banking? Because they know more about their customers, thanks to their own data collection, than banks ever could.

Things have taken a very different turn in China. Alibaba, a genuine platform with no physical warehouses of its own (but with an even more comprehensive range of items on sale, covering pretty much every eventuality in life) boasts an asset management business called "AntFortune" (run via "AntFinancial") in which around a third of Chinese money market funds are now allegedly placed. "ZhimaCredit" provides an independent credit-scoring service for the entire group, although it is hard to believe that the mass of data generated by buyers and sellers on the Alibaba platform has genuinely been ring-fenced by Chinese walls worthy of the appellation "independent". Alibaba has granted 3.5 million small business customers commercial loans currently totalling USD 4.9 billion via "MyBank", and in AliPay, the conglomerate operates the world's largest payment system, with 520 million active users and a transfer volume of USD 1.7 trillion (in 2016; the figure is likely to be much higher now).

In other words, the People's Republic of China has permitted a system to arise within its borders (and further afield) that largely closes the circle of production, wages, retail, purchasing, and payments for products. Chinese consumers – and by this we mean the more than 500 million active users – can presumably spend most of their lives swaddled in the Ali-bubble, not least as taxes are deducted at source at their workplace so they don't even need an external address for these payments. The Alibaba model obviously suits Chinese officialdom down to the ground, as it has created a quasi-autonomous instrument for managing the domestic economy that is not a million miles away from state capitalism. China needs to increase domestic consumption; the People's Bank of China need only loosen the money taps a little more in Alipay's direction and the cash registers will soon be merrily ringing. (As a side-note for Swiss readers, and this may be taken as our modest contribution to the referendum on 10 June 2018: this is a good way to imagine the money supply in a sovereign money system.)

The situation we have described is tantalising: the old hegemony's regulations are tying the hands of platform operators like Amazon and Google to some extent. The huge dataset they have amassed from their commercial activities thus cannot be deployed for banking business; and the prospects of the reverse happening are even more remote. The Chinese, on the other hand, have far fewer scruples here – and indeed elsewhere. Which set of principles will carry the day? We cannot begin to answer this question without first devoting some thought to the banking system of the future *per se*.

Alibaba's financial services



Source: author's own illustration, with reference to *The Digital Insurer: China In-Depth*

CHAPTER 4

The discreet charm of the current account

The act of paying up is a painful one. This is a conclusion drawn from observation of practical life and is unlikely to be found in the literature of theoretical economics – such tomes deal with the actions of exclusively cool-headed individuals guided by rational expectations. Losses are instantly forgotten by such people, higher purchase prices bother them not a jot and disbursement of cash for goods or services is but fair exchange, not robbery. Real life is different, however – otherwise there would be no such thing as all-inclusive offers for cruises, with buffets open at all hours of the day and night and enough beer, wine and spirits to sink a battleship, and the Swiss railways (SBB) would sell far fewer of their expensive annual travel passes, which travellers very rarely "max out". And many a concert or theatre impresario would have to close their doors were they unable to offer one-off annual subscriptions, thereby fending off the critical eye that is constantly cast over the programme when punters are faced with the pain of paying for each individual performance.

Shopping with no explicit payment process correlates with these kinds of package deal experiences that allow you to consume without consciously getting any poorer. Most department store chains are aware of these preferences amongst their clients and thus offer account cards with customised credit limits; the account balances are presumably in the black in many cases, however, as that also plays its part in the pleasure of shopping. Circumstances may well be different in notoriously indebted corners of the world such as the USA, but in any case: here, as there, a store card helps to make consumption more enjoyable, and the same is true of Amazon Prime's "periodic membership fee" – place your order, shut your eyes, and trigger the payment, seems to be the motto.

We can expect smartphones to play an even bigger role in these processes in the future – place your order, shut your eyes, trigger the payment and authorise the transaction willy-nilly with your fingerprint – ain't life grand! Hand on heart, isn't one of the greatest plus points of Uber over conventional taxis that you no longer have to faff around with cash at the end of your journey? And yes, of course, the safety argument is also a factor. We would venture to predict that many of the deals previously offered as packages that prove economically sub-optimal because of their inherent inefficiency – through underuse or non-alignment with prevailing preferences (seasickness on a cruise...), for example – will be replaced by "decoupled" payment processes. In the case of the SBB annual travel pass, an SBB current account that could be debited via a mobile would open up the possibility of consumption-based billing for customers and allow the service provider the option of setting prices according to capacity. A scheme that combines air miles balances and a current account with a passenger's most frequently used airlines may also be just around the corner.

However attractive such account arrangements and their corresponding debiting procedures might be, though, it can all soon get very confusing; frequent flyers will know just how tedious merely keeping track of one's air miles "balances" across the various different airline partnerships can be. From the consumer's perspective, there is therefore much to be said for the Alibaba principle – that is to say, for the end-to-end provision of goods, services – and money.

From the perspective of the platform operators and their suppliers, closing the circle to create this kind of all-in-one system looks more attractive still as it reduces debtor risk considerably, and the funds in circulation and the velocity at which money travels enable highly accurate forecasting, which in turn allows production to be managed very tightly and prices to be matched to demand on a near-real-time basis. The result is an almost frictionless price discrimination mechanism with efficiency gains on both the supply and the demand side. The fascinating thing is that masking the loss of cash – and whether it is via a (cheap) debit card, an (expensive) credit card or some kind of points balance seems of little matter – completely takes the sting out of the price discrimination to which the consumer is subjected! Or have any of our readers ever stormed out of an Uber vehicle because of a rain-induced price hike? Place your order, shut your eyes, trigger the payment: such is the discreet charm of the current account.

CHAPTER 5

Radical change

It is quite a challenge to be at once an eye-witness, a subject and – to a modest degree – an active participant in multiple and multifarious structural breaks within society and the economy; let's attempt to isolate and describe the current and emerging megatrends:

- *Creation of quasi-monopolistic platforms:* Google, Netflix, Amazon, Alibaba and other tech giants – the business models of all of these companies are such that marginal costs fall rapidly with volume, making it all but impossible for competitors to keep pace. "Winner takes all" is nothing more than a euphemism for a natural monopoly. Remarkably, the anti-trust authorities have thus far made no serious attempts to break these monopolies, or even to acknowledge them as such. The non-territorial nature of these new structures is also striking, and the regulatory vacuum is presumably a function of this. Furthermore, it is in the nature of such structures that they resemble marketplaces (platforms) rather than entities that produce goods or bear risks, although there are of course considerable differences: Uber still has barely a single company car of its own, while Amazon has invested heavily in its (capital-intensive) logistics infrastructure. But Uber is following suit and has placed an order for 20,000 self-driving Volvos! The one thing these tech giants ultimately have in common is that data management is the key factor in their success.

- *Transition from cash to digital payment methods:* We have described the convenience of digital payment options for consumers at some length; there are however far more wide-ranging, systemic aspects to this disruptive process. Users of payment systems increasingly expect settlement to be instantaneous and free; this means that the costs incurred in running the systems can no longer be covered (by the participating banks and system operators) and compensation must be sought elsewhere. So incorporating turnover-driven platform operators would be logical from this angle as well – to all practical intents and purposes, the banks would be out of the picture. Money that circulates in such a way will of course always require a third institution (i.e. a clearing bank) to underwrite ownership, but the user has the sensation that the money – protected by fingerprint and other identifiers – is held on the smartphone and, through emulation – that is to say, by means of a technological deception – a direct transferability of bank money to third parties will be effected, much as a music track or a video can be ported from one device to another via Bluetooth; so why not "money" as well? Twint, a direct transfer system for small sums, already works in this way. In this respect, the smartphone will play an increasingly major role, as will the operators of the leading platforms behind it all.

- *Restructuring of the system of property ownership with the advent of blockchain technology: bergsicht* readers were brought up to speed on the nature and significance of this encryption-based technology early on, at the turn of 2016 (*bergsicht 17*). In short, the system allows the legal relationships between people and assets (rights) to be unequivocally and immutably defined via blockchains; establishing ownership hence requires no institutions such as registry-keepers or banks, and transactions between individuals can be carried out without an intermediary. Such transactions are known as a "smart contracts". An *asset* in such a case can be *almost anything*, from a plot of land to a bicycle, a car or the dividend generated by a particular share. The transaction costs for this kind of blockchain securitisation are still high, and the technology consumes a lot of power to boot, but it harbours so much potential that these costs will unquestionably fall. With this proviso, the tradability of assets whose transferability has hitherto been difficult, costly or impossible, is set to skyrocket; some people are describing this process as a "liquification" of the real world. Liquidity premiums, the great stumbling block aggravating low-income groups' access to capital, will be eliminated and "people's capitalism" will become a reality. Large portions of the global population who had previously not qualified for banking services (and had thus scant prospect of any genuine participation in the economic system) will become new economic subjects as they are empowered to make transactions. The contours of this quantum leap, whose significance cannot be overstated, are already discernible today. Property rights that have been *granted* (usually "franchised" in some way) will be partially replaced by intrinsic ownership (ownership in the sense of "possession" under Roman law). Those who have grasped this will understand that something very fundamental is taking place here.

In other words, at least three mechanisms at the core of our social and economic order are being exposed to pressure from exogenous, technology-driven events: the structure of marketplaces for goods and services *per se*, the money and payment system, and the system of property ownership – and, as a function thereof, the position management and transaction processes that record property rights.

Monopolistic tendencies in marketplaces are a matter of concern in at least three respects. First, because of the premiums that are inextricably linked to monopolies and ultimately result in economically sub-optimal output. Second, because of the associated question of power – the sheer concentration of influence in Silicon Valley is unsettling, and reports of regular pilgrimages to the Mecca of high tech by company directors from this neck of the woods or by guests of auditing firms should raise a red flag in the minds of sceptical observers. And third, because we believe economic theory has not yet satisfactorily answered one key question: to whom should a (monopolistic) marketplace belong? A good while ago, we expressed doubt about the wisdom of transferring stock exchanges into the capitalist ownership of shareholders; subsequent experience with a relevant supervisory mandate has done nothing to dispel these doubts, quite the contrary. A marketplace is typically a public affair and should be equally accessible to everyone while providing benefit for all. "Public" does not necessarily mean "state", however – there are plenty of examples of private marketplaces whose ownership is organised along *cooperative* rather than *capitalist* lines. Leaving added value to be skimmed off by a select few (e.g. Jeff Bezos and Mark Zuckerberg, or Jack Ma of Alibaba) must surely seem questionable even to advocates of libertarian laws and systems of property ownership. The history of the railway barons of the 19th century seems to be repeating itself; and, as we all know, that ended with unpalatable nationalisation... It is high time the brightest and best of our economists and jurists devoted some thought to defining a "correct" property regime for modern platforms – or at least to exploring the advantages and disadvantages of various institutional arrangements, always considering the full gamut of technological consequences. Unfortunately, all we hear is intellectual crickets.

The debate about the nature of money itself, however, has been gathering momentum; cash has become a topic of discussion as never before, and not just in this country, where the thorny "sovereign money initiative" (*Vollgeldinitiative*) will demand a qualified response of us all at the referendum polling booth. It has principally been the rise and (temporary?) fall of bitcoin, the blockchain currency, that has prompted discussion of the intrinsic value of "fiat" money and algorithmically mined money round the globe, perhaps spurred on by the queasy feeling evinced by the mountains of sovereign debt piling up on the balance sheets of the central banks. What happens if the perpetuation of (presumably never repayable) sovereign debt brought about by quantitative easing ultimately debases the intrinsic value of our currency? The topic of money is unlikely to drop off the public's agenda any time soon either, as day-to-day, practical aspects of the money cycle, too, will continue to preoccupy us: the smartphone is poised to take over crucial transaction and position management functions and, as we have demonstrated, "real" money is coming under increasing pressure from balances held with platforms, airlines and other private players with skin in the game. Academics are now also beginning to turn their attention to the "big" economic questions, such as the dramatic (and sustained) collapse of the money multiplier via the commercial banks and the persistent absence of consumer price rises. So there is plenty of meat left on the bone as far as money and monetary theory are concerned, especially given that we still have a good way to go before the financial crisis of 2008/09 has been intellectually digested.

Thinking about the consequences of blockchain technology for society, the economy and our daily lives as a whole is still in its infancy; we set out our understanding earlier in this chapter. Steps should now be taken in the appropriate quarters – at strategic management level, for example – to assess the consequences of this emerging trend for firms' business models; structural change should not be viewed in an exclusively negative light! We expect the anticipated "tokenisation" (i.e. the liquification of assets of all kinds) to open up completely new business segments for banks – in conversions to fiat money or *vice versa*, for example, or in verifying the intrinsic value, or indeed existence, of "tokenised" assets. "Tokenisation" is closely related to property law in the broadest sense, but in its particularities primarily with securities and commercial law, and opens up whole new vistas for jurists who have managed to retain a modicum of creativity. There might also be a call for that *rara avis*, the lesser-spotted bankruptcy lawyer: what happens when something compromises the real-world security underlying a token and a community of co-owners has to make decisions about its future?

Three technology-driven megatrends, each fundamentally independent but all operating simultaneously – and we haven't even begun to address their interaction. What effect will the new system of property ownership have on platforms or the monetary system? Or to put it the other way: will well-oiled platforms equipped with perfect payment systems encourage or encumber blockchain technology? What happens if the major platforms start to issue their own blockchain currency and lock in the mining rights to it? With a practically closed money cycle, this might well be feasible.

CHAPTER 6

Omnivorous monsters?

At the beginning of this *bergsicht*, we discussed the extent to which the tech giants – now on the point of becoming creepy megalomaniacs – might also transform themselves into banks, and/or how the structure of the economy might look given the way information and transaction costs, having sunk and sunk again, are continuing their downward spiral. We have noted an efflorescence of small businesses and micro-companies (as foreseen by Coase's theory of the nature of the firm) and we maintain that each and every individual has, through their smartphone, been emancipated as a kind of company. However, we have also observed a concentration of platform-based activities in the hands of a tiny number of companies and an unreal creaming-off of added value by a tiny clutch of majority shareholders.

While the question of whether tech giants are set to become banks or have already done so cannot be unequivocally gainsaid in the case of Amazon, there is little doubt about Alibaba's ambitions. The way the group's business model has mastered complexity is impressive, and their purposeful approach – not to mention the speed with which they have achieved their goals – is breathtaking. Alipay, which now dwarfs Paypal, has just introduced facial recognition for 520 million active customers. Quite an achievement! No Western bank can hold a candle to that – nor would it necessarily want to, as it is not in the business of shifting goods.

We expect that efforts will continue to be made to close the gap in the money/goods/services cycle in the West as well. Given existing legislation and the rights and privileges afforded banks by such laws (not to mention anti-trust issues), this will proceed at a more leisurely pace than in China. We think the acquisition of a bank (HSBC?) by a tech giant – which on the face of it looks like an obvious move – is unlikely because of the regulatory hurdles in anti-trust and banking law; partnerships, such as that between Amazon and JP Morgan, however, are likely to be ramped up.

The proliferation of the tech giants and their partial annexation of the monetary system are not without risks, however; even if no endogenous mishaps occur (highly unlikely), exogenous shocks cannot be excluded. And how *resilient* is it to supply half the population with goods from a single source? What happens if – despite all security precautions – a fatal computer virus suddenly wipes out the user data of 520 million Alipay customers, for example? Where will China go shopping then? Where are the account balances? Who's going to provide finance for the suppliers? Such a monster, devouring all before it, is a frightening prospect.

We sense the tinkering of a sorcerer's apprentice in some areas, and there is a risk that things could get out of hand. While nobody is suggesting technological progress can be stopped, what we need at this juncture are experienced, level-headed experts who are highly attuned to the bigger picture – and for these individuals to have the courage to articulate a clear structural understanding of the situation unfolding before us. There was a time when wise heads in the USA recommended the separation of commercial and investment banking; drawing a demarcation line between Main Street and Wall Street was certainly not an ideal solution, but it gave the USA a long period of stability, and repealing the Glass-Steagall Act more or less prepared the primrose path that led to the perdition of the 2008/09 financial crisis. In much the same way, lines in the sand could now be drawn to safeguard the checks and balances that are standard operating procedure in the West, preventing concentrations of power through enforced dispersion. And we would even understand if these (yes, less efficient but, overall, more resilient and less risky) structures had to be protected from the big beasts of the new hegemony; in this respect, the current US administration is not barking up entirely the wrong tree. Underpinning it all, however, there has to be an unambiguous embracing of *decentralisation* – and a conscious repudiation of all-devouring monsters.

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