

THE INVESTMENT WORLD - OPPORTUNITIES BEYOND TRADITIONAL ASSETS

DATA MANAGEMENT SERVICES: THE STEEL INDUSTRY OF THE 21ST CENTURY

“ We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction.”

Bill Gates

“The investment world just got a lot more complex post the cyber-attack. The attack however has highlighted an unmet need that will likely define the investment asset class of this revolution”

Crossinvest Asia

STEEL: THE ONE CONSTANT THROUGHOUT THE INDUSTRIAL REVOLUTION

It's a warm day in late August 1856. A young engineer is demonstrating a new technique for producing steel that would change the world forever. His name is Henry Bessemer, and while few have heard of him, his invention will fuel the greatest change in wealth in the history of the world.

Bessemer had created a process for steel production that lowered costs by more than 90%, setting off a massive 4000% increase in steel production in the next 40 years. All this steel went into industrial machines and infrastructure that first pushed Britain into the position of world economic leaders, and later did the same for the United States.

That was the Industrial Revolution; the greatest shift of wealth in the recorded history of mankind. Entire industries were born and entire industries died in the next 30-40 years. And what is most interesting is that it wasn't the manufacturers that used the new technologies to make their goods for a lower price, but rather those that supplied the Industrial Revolution itself. By 1870, the largest companies and the wealthiest families in the world all provided either steel or transport for the vast quantities of manufactured goods that were being shipped from factories to markets. The products themselves would come and go and with them the manufacturers, but it was the providers of the core infrastructure of the Industrial Revolution: steel, coal, rail, shipping, oil and gas; that gained and kept the riches.

Economic revolutions are times of enormous change, both destructive and productive. Almost every sector of the economy faces dramatic change in cost and demand during a revolution. Picking the winners in these times has the potential to create significant wealth, but iterative cycles of technology, demand, innovation, new technology, new demand and so on makes it difficult to do so.

But each revolution has an underlying technological driver: agricultural techniques, steam engines, steel production and now digital processing and transmission technologies. Those underlying technology drivers make for more certain long-term investments in these times.

DATA: THE ONE CONSTANT THROUGH THE DIGITAL REVOLUTION

130 years later, another inventor like Henry Bessemer, stands on stage showing off his latest invention, “We are calling it the iPhone” he says. This formed the basis of the digital revolution that defines us today. The advances in computing and transmission technologies since then have, through that digital technology, changed the fabric of the economy itself.

Like with all revolutions, this change will come with its share of winners and losers. Identifying the industries that would be adversely affected by this revolution is important in order to avoid risks in investment portfolios. Most of them are fairly obvious, like retail or process driven manufacturing centres.

Furthermore, the rapid pace of change we are witnessing effectively means that today’s winners might not be winners for long - Uber is worth \$68 billion today, but can it make the transition to autonomous cars over the next decade, or will someone else disrupt the disrupter? There is very little doubt that in ten years’ time, there will be fleets of autonomous vehicles that operate just like taxis and Ubers today, but without drivers, making the cost per ride and availability so low that no-one but the “collectors” or the upper-echelons of society will bother owning their own car. But will that be Uber, or Lyft (Uber’s largest competitor now partly owned by GM), or perhaps it will be Google or a completely new competitor?

THAT SORT OF QUESTION IS WHAT MAKES INVESTING DURING A REVOLUTION CHALLENGING

We don’t have a crystal ball unfortunately to tell us where the combination of technology, entrepreneurial creativity and consumer demand will take us. But what we do know is that autonomous cars are coming and with them an enormous surge in the data that is gathered, transmitted, analysed, stored, and protected. With every trip taken in an autonomous car to retail outlets (or wherever clothes will be bought by then), to restaurants, clubs, work, school or any other destination, the car will create data that has value to someone selling something somewhere.

Similarly we don’t know who will sell the connected medical device that can monitor ones heart more than ten times better than today’s products, but we know that almost all health monitors will be online.

Data assets are being created literally with every beat, with economic value to the user for obvious reasons but also to health equipment providers and insurers. With that economic value, the need for data management infrastructure regardless of who sells that device becomes ever so more critical.

We at Crossinvest believe that data and data management services are the steel, coal, rail, shipping, oil and gas of the digital revolution. These are the goods and services that no matter which direction the digital revolution takes us, so long as it keeps growing, their demand will grow.

THE DIGITAL REVOLUTION IS NOW UNSTOPPABLE: THAT MEANS DATA MANAGEMENT'S GROWTH IS TOO

The total amount of data created and copied each year is currently around 18 zettabytes and doubling every two years (a ZB is 1,000,000,000,000 GB, or around 157 million years of HD movies).

The ability of digital technology to change every part of our lives creates enormous opportunities for those that can, as Steve Jobs would say, think differently. Trying to forecast exactly what the products and services of the future will succeed is impossible.

The current list of new technologies changing lives every day includes being in a connected home, brain-computer interface, human augmentation, 3D Bio-printing systems, smart robots, smart advisors, virtual personal assistants, energy storage, the sharing economy, speech to speech translation, internet of things, wearable user interfaces, consumer 3D printing, cryptocurrencies, content analytics, augmented reality, 3D scanners, or speech recognition, to name only but a few. And the irony of it all is that the faster these innovations reach the market, the quicker new innovations will emerge that will further disrupt these technologies. Forecasting the success of individual products / services is extremely challenging in a period of such rapid change.

What we do know however is that the digital revolution has gone far beyond the point of no return: it will keep growing exponentially for the next 20-30 years. And with it, the volume of data and the value of that data will become the steel of this revolution. This will invariably give rise to the need for value of services to protect and increase data value.

The infrastructure of the digital economy is likely to include three broad categories:

Categories	Description	Success factors
Physical infrastructure	Transmission and storage of data	The rapid growth in data volumes means storage and transmission costs will continue to be under pressure. Technologies that enable quantum steps downwards in these costs will be tomorrow's Microsoft or Google.
Risk management	Protection and insurance	More data moving between more devices and more critical impact if that data is lost as those devices become part of our daily lives, all means that the demand for protection and insurance of that data will rise exponentially with the data itself.
Enhancement of value	Analysis and monetisation of data	Known as "Big Data", this sector has enormous growth potential in the 2020s. Companies don't yet value data on their balance sheet, but that time will come quickly, and when it does so too will come the demand for services that allow companies to unlock its full value.

EXAMPLE: RISK MANAGEMENT

The global cyber-attack from a “worm” that attacked vulnerable Microsoft software on May 12th this year highlighted why there has been explosive demand for data risk management services. The attack wasn’t targeted at any one organisation - it was a “self-starting” worm that sought out the next vulnerable asset, moving between organisations extremely rapidly.

The UK’s National Health Service was the worst impacted, with entire hospitals forced to work with electronic patient records, emergency departments’ shutdown and critical surgery postponed. Also impacted were Germany’s urban rail network, FedEx, Spain and Portugal’s national telecommunications providers, and even the Russian Interior Ministry.

By the time it was halted, 200,000 computers in 150 countries were impacted. The cost of this attack will include business interruption, the cost of restoring data (if possible), legal costs, regulatory fines and lost productivity as staff work on restoration and recovery. The average SME that suffers such a cyber-attack lose significant traction with potentially disastrous outcomes (including closure) once they lose access to their data. The larger organisations are more vulnerable to cyber-attacks due to their IT complexity.

In 2016, US\$81 billion was spent on 90+ categories of products to defend data from accidental or malicious damage or loss. Yet ransomware attacks reported rose 51%. The UK government is spending around US\$650m a year on cybersecurity, yet lost around half of its national health infrastructure. That is why spending on defence will only be part of the total spending boom: insurance is likely be the next growth market.

SO HOW DOES ONE MAKE SENSE OF THIS ALL?

The investment world over the next 10 - 20 years is likely to be different from what we have today. That said, there is a need (and will continue to be a need) for a well thought through investment portfolio comprised of traditional assets, underpinned by the timeless principles of investing through a strategic and a diversified asset allocation methodologies.

There is however an increased need for allocation to private assets to ensure investment portfolios includes some of the fastest growing unlisted assets in the world. By the time companies like Google, Facebook, AirBNB, or Uber reach listed share markets, their best returns could be behind them.

The biggest risk however is that the chances of the more successful private companies, the initial disruptors, being disrupted in the near future is potentially high. ***The most critical thing to know however is the digital revolution itself is not likely to be disrupted.*** Every new company with a product that uses digital technologies to change our lives, whether wirelessly connected health monitors, autonomous vehicle fleets that replace the family car, or the next Amazon that creates a whole new way to shop, will all create exponential demand for more data.

And with that comes increased demand for data infrastructure services: transport, storage, protection, insurance and enhancement.

And with everything else that is happening around us today leading to better health and living conditions, a new and enhanced demand is being created for agriculture, infrastructure and newer and safer ways of creating energy.

These are likely to be the core investment sectors for the new economy.

Crossinvest, through its soon to be launched **CROSSINVEST PRIVATE ACCESS**, will provide the underlying platform through which to gain exposure to private companies in their fastest growth phase, before they reach listed markets.

Watch this space!!

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