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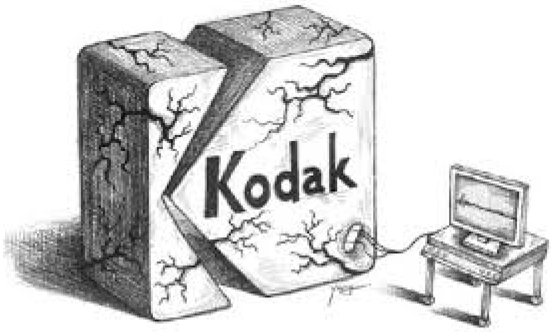

In this quarterly edition we review performance and attribution. Our headline stories include Aconex and our take on the Public verse Private debate. We review the response of management teams who have been "side swiped". We take a look at the importance of Voting. Finally, we investigate the potential of a Liquid Biopsy. Image: "Creation, Destruction".

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selector

About Selector

We are a boutique fund manager with a combined experience of over 150 years. We believe in long-term wealth creation and building lasting relationships with our investors.

Our focus is stock selection. Our funds are high conviction, concentrated and index unaware. As a result, we have low turnover and produce tax effective returns.

We seek businesses with leadership qualities, run by competent management teams, underpinned by strong balance sheets and with a focus on capital management.

Dear Investor,

The year will be remembered for many things but none more so than the inability of pollsters to accurately forecast the outcomes of key events including the Brexit referendum and the U.S. Election. This sheds light on the difficulties that all investors face, that of collating known data and making a judgement call, often in the face of contradictory evidence.

As we have seen, the aftershock of major outcomes often results in extreme moves. This was the case following both political events and is now being played out in the bond market, where an extended period of low interest rate settings appears to be giving way to a gradual tightening.

In the near term such inflection points play havoc on markets as investors look to adjust expectations under a seemingly new economic environment. Already, we have witnessed interest rate sensitive investments sold off, commodity related sectors snapped up and cyclical businesses preferred over consumer and health related investments.

This will continue to play out for as long as is necessary but irrespective of the reasons behind the moves, sentiment only takes you so far. Ultimately, every investment must be considered on its individual merits and must deliver over the longer run. Our focus remains very much on those that meet our requirements.

To this end, debt reduction has become an even bigger theme throughout the period as companies including the likes of BHP Billiton, Origin Energy and Santos, to name a few, have listed this pursuit as a current key focus. Unfortunately, shareholders will be lamenting the fact that it has taken this long, validating one of our key business tenets of avoiding investments where debt is seen as part of a corporate agenda.

In this quarterly we consider some of the issues that have caught our attention, including how companies react when side-swiped by external events, leading to a more fundamental question of whether some are best suited to operate privately rather than under the public light. We profile Software as a Service (SaaS) provider Aconex, follow up with a short piece on the growing influence of proxy advisors and comment on Liquid Biopsies. We close with our ongoing long term concerns regarding Australia's growing budget deficits.

For the December 2016 quarter the Fund delivered a gross negative return of **6.64%**. In contrast the All Ordinaries Accumulation Index has delivered positive returns of **4.41%** over the same period. For the financial year to date the Fund has returned a gross gain of **4.62%** against the Index rise of **9.94%**. We trust you find the report informative.

Regards

Selector Investment Team

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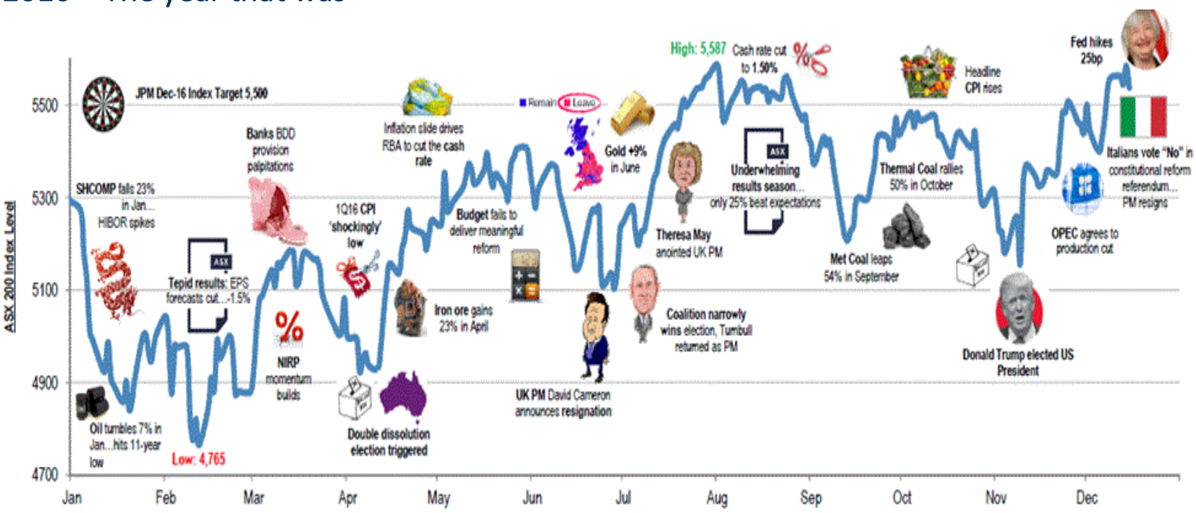
Quote: Alec Ross

Author and Keynote Presenter, UBS Australasia Conference

"Creation, destruction"

In discussing the "Industries of the Future", Ross noted that 40% of what makes up today's U.S. Gross Domestic Product didn't exist 40 years ago. New industries have been formed and many older ones destroyed. ***SFM***

2016 – The year that was



Source: J.P. Morgan

Performance December 2016

For the quarter ending December 2016, the Fund delivered a gross negative return of **6.64%** as compared with the **4.41%** rise in the All Ordinaries Accumulation Index.

Performance since inception

Returns	Gross Fund Return %	All Ordinaries Accumulation Index %	All Ordinaries Index %
3 Months	-6.64	4.41	3.51
6 Months	4.62	9.94	7.70
1 Year	6.19	11.65	7.01
3 Years annualised	14.32	6.76	2.23
5 Years annualised	22.82	11.59	6.83
10 Years annualised	6.49	4.51	0.13
Since Inception annualised	11.80	7.91	3.14

Fund's Top 10 holdings

Top 10 December 2016	Top 10 September 2016
AINSWORTH GAME TECHNOLOGY	ALTIUM
ALTIUM	ARISTOCRAT LEISURE
ARISTOCRAT LEISURE	COCHLEAR
COCHLEAR	CSL
CSL	FLIGHT CENTRE TRAVEL GROUP
GBST HOLDINGS	GBST HOLDINGS
RESMED	RESMED
SEEK	SEEK
TECHNOLOGY ONE	TECHNOLOGY ONE
THE STAR ENTERTAINMENT GROUP	THE STAR ENTERTAINMENT GROUP
Top 10: 43.18%	**Top 10: 45.22%**

Selector employs a high conviction, index unaware, stock selection investment strategy, which typically targets 15-25 stocks for the Fund. As shown above, the Fund's top 10 positions usually represent a high percentage of its equity exposure. Current and past portfolio composition has historically been very unlike that of your average "run-of-the-mill index hugging" fund manager. Our goal remains focused on truly differentiated broad-cap businesses rather than the closet index hugging portfolios offered by most of the large fund managers.

Performance Attribution for the December 2016 Quarter

Top 5 stock contributors	(%)	Top 5 stock detractors	(%)
SIMS METAL MANAGEMENT	0.81	SIRTEX MEDICAL	-1.82
COMPUTERSHARE	0.42	IMPEDIMED	-0.91
IOOF HOLDINGS	0.18	ALTIUM	-0.79
RELIANCE WORLDWIDE	0.14	GBST HOLDINGS	-0.55
ACONEX	0.12	COCHLEAR	-0.55

Top contributors

1. Sims Metal Management (ASX: SGM)

Sims Metal Management's annual meeting reaffirmed management's confidence that the corrective steps taken during the 2016 financial year have positioned the business to benefit when market conditions improve. Controllable costs were lowered by $137m, reducing the sales volume break-even point of the business by 17%. Low steel scrap and iron ore prices through the first half of 2016 have seen the business receive little benefit from initiatives enacted to date, however, the improved second half earnings in 2016 are an encouraging sign that the business is on the right track.

2. Computershare (ASX: CPU)

Computershare is a global leader in transfer agency and share registry operations. Over the last decade the skill sets that Computershare has developed in these areas has been rolled out into new business lines including mortgage servicing, corporate trust, bankruptcy, class action administration and a number of other areas.

Computershare has previously been the beneficiary of interest received on funds held on behalf of clients and while this remains the case, falling interest rates have posed a significant headwind to group earnings over the last 10 years. While it will take some time for increased interest rates to flow through to the Computershare client balance book, the abatement of the margin compression bodes well for the overall business which is positioned for growth. Computershare has a total market capitalisation of $6.8b and net debt of $1.1b.

3. IOOF Holdings (ASX: IFL)

Australia's leading independent wealth manager remains well positioned to continue on its long track record of growth. Specifically, the company 's approach is centred on three core drivers, being organically focused, driving greater operating efficiencies and acquisitions that are opportunistic and accretive in nature. The business is financially well positioned, carrying little net debt and enjoying strong growth in funds under administration and management (FUMA) that now exceeds $100 billion.

4. Reliance Worldwide Corporation (ASX: RWC)

Plumbing group Reliance Worldwide Corporation was profiled in our September 2016 quarterly newsletter. The company's primary focus is in the "push-to-connect" plumbing fittings market. Currently the total U.S. "push-to-connect" market share sits at around 10%

by volume or USD$400 in value. Reliance's market leading brand SharkBite and its PEX pipe offering commands 80% share, focused specifically on the repair and remodel market. Whilst the group does not currently supply the new construction market, the imminent launch of EvoPEX, an end to end solution for new home construction, is expected to target a market opportunity estimated at USD$2b - $3.5b.

5. Aconex (ASX: ACX)

Founded in 2000, Aconex is a global provider of software services targeting the USD$10 trillion construction industry, as it transitions to the online digital world. Its business model is based on a SaaS (software as a service) offering, with customers paying a recurring subscription fee to have unlimited access to the platform offering. Management is presently focused on three key outcomes; grow the network, increase customer value and drive business performance. The group operates across all regions, with over 60,000 user organisations, supported by 47 offices in 23 countries. The founders remain major shareholders and key executives of the business, one that is in the early stages of its growth, reporting annual revenues of $123 million, gross margins of 75% and operating profits of $6.1 million. No net debt.

Bottom attribution

1. Sirtex Medical (ASX: SRX)

Sirtex Medical provided a disappointing update to investors during the quarter, outlining their expectations for lower dose sales growth in the half and full year, which will in turn deliver lower earnings. Based on current observations and forecasts, management expects 4% - 6% dose sales growth in the first half and 5% - 11% for the full year, compared with earlier guidance for double digit growth. Continued investment in the business and the lower than expected dose sales for the period has resulted in operating profit expectations of $65m - $74m compared to 2016 operating profits of $75m. The company outlined a range of issues including competition from new drugs as well as reimbursement delays in a number of regions. In addition, uptake by clinicians has slowed as they await overall survival data from the upcoming Sirflox trial results expected in first half of calendar year 2017. In the interim management have lost a significant degree of investor confidence. The company remains debt free with net cash of $107 million.

2. Impedimed (ASX: IPD)

Despite no significant news or updates being released during the month, Impedimed has been negatively impacted by market movements. As a company early in its lifecycle with little revenue, Impedimed is exposed during uncertain periods in which investors seek to reduce risk. Notwithstanding this risk, the size of the opportunity open to Impedimed, combined with a strengthened management team has the company well positioned for the future. The company remains debt free with net cash of $73 million.

3. Altium (ASX: ALU)

Printed circuit board design software group, with operations in the U.S., Europe and Asia. Subscription based business model, making significant progress in expanding product offering with short term aims of growing revenues to USD$100 million by 2017 and market leadership in PCB design by 2020. No net debt.

4. GBST Holdings (ASX: GBT)

GBST is an emerging global player in the provision of software solutions for financial markets. Operations cover both capital markets and wealth management with recurring licence fees now commanding 60% of total group revenue. International revenues comprise more than half of total revenues, with UK operations the key driver of recent outperformance. The Brexit decision has clearly impacted investor sentiment in the short term. More likely in the medium to long term, changes to regulations as a result of any exit may lead to increased business for GBST, driven by client needs for more robust systems when dealing with financial markets transactions.

5. Cochlear (ASX: COH)

Installed base of 440,000 cochlear and BAHA implant recipients, with product upgrades and accessories now representing 25% of group full year sales. Full suite of products, addressing a global market audience of 360 million people, suffering disabling hearing loss, compared with a market penetration running at less than 5%. Strategic focus to grow the business core and build a bigger service offering. Net debt $120 million.

Aconex (ASX: ACX) - Keeping construction on track

What does Aconex do?

In our introductory quote "creation, destruction", we highlighted the changing dynamics that all businesses encounter. Underscored by a constant need to adapt and innovate in the face of new competitive forces and technological advancements, change is both necessary and painful. Aconex is illustrative of this new force, acting to disrupt old ways with newer methods.

In its most basic form, Aconex provides construction industry participants with software that gives them insight and control over their portfolios by creating a single book of record/truth for a project. In doing so they allow for considerable cost savings while automating time consuming processes that normally require manual intervention. Aconex's solutions help participants throughout the entire lifecycle of projects from planning, delivery to post completion operations. The solutions include functions such as document management, building information modelling, bid and tender processes, workflows, field management and at construction completion, asset handover.

Anyone who has ever undertaken a renovation would appreciate the complexity that arises from the diversity of trades involved and the inherent risks attached to completing on time and budget. For construction industry participants undertaking expensive and complex projects, timely delivery, risk mitigation, compliance and accurate cost management are all crucial to ensure successful project completion and achievement of positive financial outcomes.

As such, the aim of Aconex is to provide its clients with the tools to better handle these issues. The successful outcome of a single project can affect a multitude of stakeholders ranging from the asset owners, construction project manager, architects, sub-contractors to the party tasked with managing the asset when complete.

Aconex achieves this by providing software that displaces the traditional paper and email centric manual processes. These solutions are delivered to customers via a Software-as-a-Service (SaaS) model, which provides users with access on any device, wherever they happen to be working, at any time.

In contrast, the construction industry has historically relied on documents that are frequently updated, transferred and shared as either hard copies or with cumbersome file transfers and inefficient software programs. For an industry that lays claim to being one of the least digitised of all industries, the Aconex SaaS offering, ensures all stakeholders are working on the same version of a document, as soon as it is uploaded. It is these types of improvements that Aconex has been seeking to make since 2000.

How did Aconex get to where they are now?

Aconex was co-founded in 2000 by current CEO Leigh Jasper and Senior Vice President Product and Engineering Rob Phillpot. Jasper and Phillpot founded the company largely as a result of their observations and experiences in previous roles. In Phillpot's case this was with construction group Brookfield Multiplex where he was tasked with document control, quality and trades, observing first-hand the inefficiencies of the construction industry. Incorrectly distributed documents lead to mistakes, which culminated in substantial, costly delays.

The entire industry relied almost completely on hard copies, an inefficient method of information transfer. Jasper, on the other hand, worked for management consultants McKinsey and Company and A.T. Kearney where he helped corporations with IT integrations to improve productivity. Together, the two recognised a gap in the market for a neutral software provider that could help improve the construction industry's productivity.

Jasper and Phillpot kicked things off in 2001, launching their first product which encompassed document management, correspondence and tendering modules to the commercial and residential segments in Australia. The company subsequently added supplier documents, workflows, mobility, field inspections and cost planning modules.

Expansion into new markets including the U.K., Asia and North American regions was complemented with offerings for infrastructure, government, mining and energy sectors. Close collaboration with clients provides the company with the ability to identify areas that need solutions and an outlet to test new product offerings.

In some instances, the company has acquired existing competitive or complementary offerings, illustrated by its purchase of cost management solution, Worksite, in 2016. This has enabled the company to integrate the business into the Aconex, by first beta testing the new module with a small number of clients before it’s full launch. In identifying and rolling out additional functionality to the group’s existing customers, Aconex is better able to retain current clients as well as win new ones. Management have noted that it was unlikely that they would have won the deal to supply Tesla with a construction collaboration software solution if they had not been able to provide the cost module.

Aconex’s business model

Aconex bills customers through recurring license fees with pricing based on project size and complexity. Customers can choose either a project-based agreement or one that is enterprise-wide. New customers typically choose to place either one or a small proportion of their projects on the system to evaluate it's potential. As customers become more familiar with the system and its capabilities, Aconex then looks to transition the customer to an enterprise wide agreement which enables all new projects to be co-ordinated on the Aconex system.

Enterprise agreements give management more visibility over future revenues and are seen as more valuable and sticky, since the difficulty of transitioning an entire business off one system onto another is seen as less likely. When the company listed in 2014, billings were running at around 0.09% of the value of the projects being managed on the system. For example, if Brookfield Multiplex develops a project with a total development cost of $1 billion, Aconex can expect to earn $900,000 in license fees. In the construction industry, 20% of projects take longer to finish than anticipated and around 80% run over budget. A tool that keeps projects on time and budget has a very short pay-back period.

Over time we expect the average price to rise as customers' progress beyond using the core system by utilising additional modules, which in turn helps the platform become ingrained as the industry's best practice solution. This is exactly what the company has been experiencing since its public listing.

The business is well established in Australia, having enjoyed a head start by virtue of the founders' domestic client connections and business backgrounds. This has seen the Australian business approach maturity at a faster rate than any of the other international regions. Penetration in the U.K. and the U.S. remains relatively low but has been accelerating in recent years. Key client wins including industry leaders Burns McDonnell, CIMIC, Fluor, Bechtel and Exxon Mobile are validations of the company's strategy. They act as important additions to the network, in terms of size, reach and geographic presence covering diverse range of sectors.

What will Aconex look like in 5 years' time?

Aconex's collaborative nature ensures all participants have access to the service. When one group commits to using the Aconex platform to co-ordinate or manage a job, a number of other parties are required to follow. Not unlike the network effects experienced by social media and online classifieds market places, the greater the number of users, the more valuable it becomes to both existing and new users.

For example, if a customer is choosing a collaboration software provider, and none of their contractors use or have a preference for a particular provider, the client will probably not be influenced by those contractors' preferences. If, however, the majority of their contractors and project stakeholders do have a preference, this will be a key consideration of the client in choosing their provider. This is due to the benefits of having everyone already familiar with a particular system and the pain involved with coaxing contractors off one onto another. As such, the network effect can be a self-reinforcing, virtuous cycle.

As Aconex continues to capitalise on this trend, we expect penetration of the construction market to rise as more participants commit to using Aconex on both a project and an enterprise basis. During 2016, the ANZ region generated revenues of $49m and contributed $34.5m to group earnings before deduction of head office costs, representing earnings contribution margins of 71%. In contrast, the Americas, Europe, the Middle East and Africa (EMEA) and Asian regions made earnings contributions at margins of 10%, 44% and 15% respectively.

This is very much reflective of the level of investment required in the earlier stages of growing a country presence largely through the sales and marketing cost line. Importantly, each of these markets is significantly larger than the ANZ region and although we expect the margins in the other regions to track towards 70% over time, the absolute value of the revenues and profits to be earned from each market has the potential to be larger.

Table 1: Aconex Regional Financials

Year	30/06/2016	30/06/2015	30/06/2014	30/06/2013	30/06/2012
Revenue ($m)					
Australia and NZ	48.8	36.2	31.5	26.7	22.5
Asia	13.3	10.2	7.6	6.1	5.2
Americas	21.3	14.7	10.7	7.9	5.4
EMEA	39.9	21.3	16.5	11.6	11.2
Total	**123.4**	**82.4**	**66.3**	**52.3**	**44.3**
EBIT ($m)					
Australia and NZ	34.5	25.3	20.5	16.1	14.2
Asia	2.0	1.6	0.9	0.3	0.1
Americas	2.2	0.5	(1.5)	(1.9)	(1.5)
EMEA	17.4	6.5	5.1	2.0	3.7
Head office	(42.5)	(32.8)	(29.1)	(26.5)	(20.7)
Total EBIT	**13.6**	**1.2**	**(4.1)**	**(10.0)**	**(4.2)**
EBIT Margins					
Australia and NZ	*70.7%*	*69.9%*	*65.1%*	*60.3%*	*63.1%*
Asia	*15.0%*	*15.3%*	*11.8%*	*4.9%*	*1.9%*
Americas	*10.4%*	*3.7%*	*(14.0%)*	*(24.1%)*	*(27.8%)*
EMEA	*43.6%*	*30.7%*	*30.9%*	*17.2%*	*33.0%*
Group	***11.0%***	***1.4%***	***(6.2%)***	***(19.1%)***	***(9.5%)***

Why SaaS is growing

The SaaS business model offers numerous benefits to both client and vendor. Clients face lower costs for the maintenance of in-house technology systems and all round better functionality. The vendor, Aconex in this case, generates operating leverage once critical scale has been reached, allowing them to increase product development.

SaaS offerings also ensure that work done to enhance the product of one customer improves the utility of the product for all other customers, unlike some software developers who customise solutions for their clients. This generates better returns for every dollar spent on research and development (R&D) as product improvements can be effectively marketed when selling to new and existing customers.

Not unlike the online classifieds businesses, the construction collaboration software market will likely shape up to be a winner takes all, or winner takes most market. Although Aconex faces competition from a number of smaller players, their scale already appears to be providing the group with distinct advantages. Notably these include a superior and more comprehensive product suite and a larger business infrastructure.

Currently the group operates out of 47 offices, serving customers in 70 countries and employs more than 200 people. Over 4.5 million users are set up on the platform which now manages over 2.1 billion documents.

Summary

The company has provided an outlook for the medium term, which is comprised of annual growth in revenue of 20% - 25%, growth in sales and marketing expenses of roughly 20% - 25%, constant R&D expense of 14% - 15% of revenues, with general and administration expenses growth of roughly 9%.

The upshot of such an outlook indicates that the company expects healthy top line growth in combination with slower growth in expenditure which in turn drives operating leverage and growing bottom line profits. The commitment to continued growth in sales and marketing can be expected to generate ongoing client wins and top line growth, while substantial R&D investment will help keep competition at bay by creating a more compelling user experience.

Aconex ticks the critical boxes of key business investment attributes we seek. The management team is transparent and committed to the execution of the business strategy. The business appears to be a leader in its field with a defensible competitive advantage. An ungeared balance sheet with net cash of $49m, combined with a cash generative operating model should see little need for further capital raisings.

Aconex has a large addressable market. The business model employed by the company is disruptive and scalable. We believe this combination of attributes should deliver consistent, real earnings per share growth over time. Aconex currently has a total market capitalisation of $945m. ***SFM***

Side-swiped

The term being side-swiped is most often applied to car incidents. The end result of a surprise hit from a rogue driver. No amount of preparation guards against such an event despite the best of driver responses.

Not wanting to downplay the gravity of these real life incidences, investing can often feel the same. A business travelling comfortably along its chosen path and then whoosh, a direct hit. It can happen at any moment, leaving management particularly vulnerable in dealing with the aftermath.

The phrase "damage control" becomes a frequently used term in such events and over recent months a number of companies have felt the full force of being side-swiped, with the subsequent recoveries being varied. This list includes BHP Billiton* and its environmental tailing dam disaster in Brazil. This has further to play out although the market appears to have moved on, buoyed by a rising iron ore price.

Closer-to-home, theme park operator Ardent Leisure* has had to cope with a damaged Dreamworld brand following the tragic deaths of four patrons at one of its amusement rides.

A most recent event impacting our portfolio has been our investment in liver cancer medical group Sirtex Medical. Following a long period of outstanding growth in dose unit sales, the company updated investors in December with news that a number of factors would impact earnings this year. Rather than an expected 15% growth in dose numbers, management were now forecasting full year growth of just 5% - 11%.

Further impacting matters was the decision by the board to independently investigate share trading undertaken by CEO Gilman Wong in October. On the surface, the CEO actions were not a good look considering the subsequent update some months later. The subsequent shellacking handed to the group's share price post these events seemed extreme but nevertheless understandable under the circumstances.

Over in China, a crackdown on illegal gaming activities led to the detainment of a number of staff from casino operator Crown Resorts*. The initial lack of details surrounding the reasons for such action, compounded investor concerns regarding the long term implications for the yet to be built VIP casino at Barangaroo in Sydney.

Being side-swiped also has implications for innocent parties. Crown's direct hit has indirectly affected other casino operators, so it wasn't surprising to see both N.Z. based SkyCity Entertainment Group* and The Star Entertainment Group call out an impact on their trading from China's actions.

The regulatory risks in China have also extended into health and consumer products, catching the likes of Blackmores and Bellamy's Australia* off guard.

Over in the U.K., the voters' choice to exit the European Union was unexpected, with its potential impact poorly understood. In a similar vein to China's moves, the Brexit vote was expected to hit investment and consumer confidence. This directly impacted businesses exposed to the U.K. region, including the likes of software vender GBST and IRESS as well as major financial institutions like BT Financial* and Henderson Group*.

Australian authorities are also not immune to hitting businesses where it hurts. The Government has chosen to focus its attention on a host of industries including the vocational, education and training sector, aged care facilities, the banking and financial services industry and health related services.

Under such a long list of potential exposures it is difficult to know where to start and stop. Avoiding risk is easier said than done, although some sectors carry greater longer term concerns.

When analysing any business, understanding which to side-step is incredibly important, as is the acknowledgement that while risk can be somewhat contained it cannot be eliminated. To this end, dealing with adverse events can take many forms but crucially, an important aspect is the ongoing financial wellbeing of the business.

There is no denying that any business is vulnerable and the more single-focused one is, the more exposed it becomes. A few examples spring to mind, including the product recall of Cochlear's Nucleus 6 implant device in 2011 and the loss of gaming operations suffered by the Tatts Group* in 2008, when the then Victorian Labor Government ruled not to renew its license.

These could have been life threatening events for both businesses but in each instance management were able to regroup and deal with their respective issues. In the interim, shareholders felt the full force of uncertainty, with share prices under pressure, as costs ramped up and reduced profits loomed large in investors' minds.

With the passing of time and for a good number of companies, many issues that appear terminal at first become hiccups in the life cycle of a business. Most tellingly, the very good businesses often come through these periods stronger, focused and more resilient.

There is, however, a caveat here that needs to be understood. Side-swipes can be self-induced or externally delivered. Those that are from within can be more easily repaired while outside events are more difficult and potentially more damaging. Case in point are new regulatory changes that can have an immediate impact, leaving little room for manoeuvring.

This was certainly the situation with reforms to the Vocational Education and Training (VET-FEE) industry, which instantly changed the funding dynamics and altered the operating regimes for all players within the sector. While many have not survived as a result, others including SEEK Learning are in the process of adapting. This is likely to take some time and Governments are also likely to review some aspects of the new guidelines. We suspect a better, more robust model will eventuate.

The same can also be said of Blackmores, post changes to China's formulation registration process. The pent up demand for complementary vitamins and supplements from Chinese shoppers visiting our local stores fell as restrictions were enforced by Chinese authorities on imported goods, leading to a significant slowdown in consumer demand.

Management, led by CEO Christine Holgate, moved quickly to deal with this new threat to customer purchasing patterns, establishing a direct export marketing team to service its Chinese shoppers. In short, the company effectively supplemented the role of the individual overseas shopper with a direct sales channel that targets large overseas buying groups who service the Chinese market. In time, this move is likely to provide greater consistency to product demand whilst supporting a growing business base.

Over at Star Entertainment Group, the fallout from a renewed clampdown on VIP gamblers from Chinese authorities is more difficult to determine. The term "being left in the dark", is one that can be easily applied to many Chinese matters. The CEO of Star, Matt Bekier refers to the "unspoken rules" when trying to piece together what can and can't be done in attracting VIP players.

Like Blackmores, getting sufficient clarity is not easy but importantly, it does act as a circuit breaker to reassess operations. Too often shareholder capital is committed without due consideration as to the risks involved.

All this is to impress that investing is not about a straight line of share price performance. Dealing with setbacks and how management respond is often a test of whether lessons have been learnt.

Avoiding debt

The events of the past few months have once again reinforced the importance of balance sheet strength. In this context we are not referring to having an optimal gearing position or access to bank debt. Our position on this is quite the opposite. We prefer businesses that carry no net debt in the normal course of business. Acquisitions aside, which should be considered on a case by case basis, the lessons that have been learnt clearly support our view that having cash on hand is a real asset when things go wrong.

Business including the likes of SEEK, Blackmores and even The Star Entertainment Group are in the relatively strong position of having minimal debt relevant to their underlying earnings base, thereby greatly assisting their ability to focus on the task at hand without dealing with bankers or financial survival.

Ardent Leisure fortuitously sold one of its operations, receiving a substantial cash settlement just prior to the unfortunate accident at its Queensland theme park. Carrying over $300m of gross debt, the sale released over $230m of cash and provided a welcome breathing space had the circumstances post the incident proved more difficult.

All too often, management present the financials and balance sheet of a business under normal operating circumstances. In Ardent's case, the company reported ample headroom to take on additional debt even though the actual dollar amount was already sufficiently high.

But as the events at Ardent have shown, management also need to consider what happens when things are not normal.

Having the flexibility in dealing with unforeseen, side-swiping events is not only prudent but our preferred way of investing. In this context, companies that have dominant shareholders, typically founders, including the likes of Blackmores, Reece, ResMed and Flight Centre to name just a few, operate under just such a scenario. It is only during times of crisis that the real value of having net cash on the balance sheet is well and truly appreciated. ***SFM***

**SFML does not hold positions in any of these companies.*

Public v Private?

It is becoming more and more apparent that the benefits of being a public company are fast eroding. The principal role of the stock exchange is to allow for the flow of capital between investors on one hand and businesses in need of financial support on the other. Once a business is listed, the markets become an electronic meeting point, allowing buyers and sellers to transact.

Being a publicly traded forum, the markets work efficiently, enabling investors to receive up to date company information on which to form views and carry out investment intentions. For the most part it acts rationally but more and more the essence of what investing is meant to represent is being tested.

As we outline later in our piece on voting, the rights of shareholders are being sorely tested as management teams and boards respond to the growing power base of proxy advisors looking to force change. Even more pressing is the need for management, under the stock exchanges continuous reporting regime to update investors should company circumstances alter. This is seen as a vital requirement, ensuring market integrity, but this too is re-shaping how things are said and done.

At the coal face, it's pretty obvious that no company wants to deliver bad news. "Trading update" are probably two of the most feared words among professional investors. As a consequence, companies are learning to say less, promise less and in some cases invest less. There is no upside in doing more, saying more or investing more. That is because investors cast their judgements through the markets where the slightest hint of disappointment is met with a quick, no-nonsense response.

As a result, boards and management teams have become conditioned when addressing investors. The style of reporting and the overuse of words including "underlying" and "growth" is all about softening the immediate blow whilst providing reassurance that the longer term outlook is positive.

Analysts in turn dissect updates for any hint of concern. Any move away from consensus guidance, a term to describe what the average of all their profit forecast figures tally to, remains a key barometer for investors. A slight miss is seen as a bad miss while a measured beat is lauded. With so many investors and commentators anchored to a number, management are acutely aware of its potential impact.

Those that think this has little behavioural impact on what is reported are perhaps not understanding the pressure placed on executives to keep investors satisfied. It is a disappointing outcome and a reality of how markets operate. Performance numbers matter for a whole range of market participants.

This poses a serious question, are companies better to operate privately rather than publicly? This is not to belittle the important function that markets perform, rather it is the unrelenting pressure that is piled onto businesses and management teams to deliver quarter on quarter.

In reality what we ultimately seek are publicly traded businesses, run by management teams and boards that understand their corporate responsibilities, but more importantly think, act and invest for the long term as if in a private business.

The real issue for us is not the share price volatility that may follow any earnings slowdown but the change in strategy that may eventuate as a result. This can take many forms although the most obvious includes cost cutting initiatives or reductions to marketing or investment expenditure to meet short term targets. These types of outcomes are precisely what we don't seek in a business, be they private or public.

Fortunately, there are a sufficient number of companies that do understand the importance of sticking to a game plan and reinvesting over the long run, despite the shareholder challenge that may result. The following extracts are illustrative of businesses that have publicly committed to putting the interests of the company first.

NIB Holdings

We reviewed the company in our December 2012 Quarterly Newsletter. The business that we spoke about back then has morphed further. While Australian health insurance (ARHI) remains the group's principal area of focus, management's cautious investment approach over the years, now has the business positioned to reap increasing diversified earnings streams.

While ARHI is the central business plank, NIB has extended the company into new divisional lines incorporating international students, international workers, New Zealand private health coverage via the acquisition of Tower Medical Health in 2012 and more recently travel medical insurance via the World Nomads Group acquisition in 2015.

At a recent investor conference Mark Fitzgibbon, the CEO of NIB since 2001, laid out how the health landscape may look like in the years and decades ahead. Looking out to 2025, 2035 and 2040, the requirements on the business from the changing regulatory and technological landscape is more art than science. Governments are notoriously good at imposing their will, a key risk that the likes of NIB need to navigate.

As difficult as this may be, NIB has stolen a march on some competitors including the likes of Medibank Private, who have suffered from poor customer satisfaction and a questionable marketing strategy that has seen its fighting brand AHM win share at the expense of its key and more profitable brand Medibank Private. At the recent Annual General Meeting new CEO Craig Drummond put aside the issue of short term targets, insisting, "*We are not playing the short game. Our focus is on building a sustainably successful business. I am confident we can deliver on this objective for the benefit of all shareholders.*"

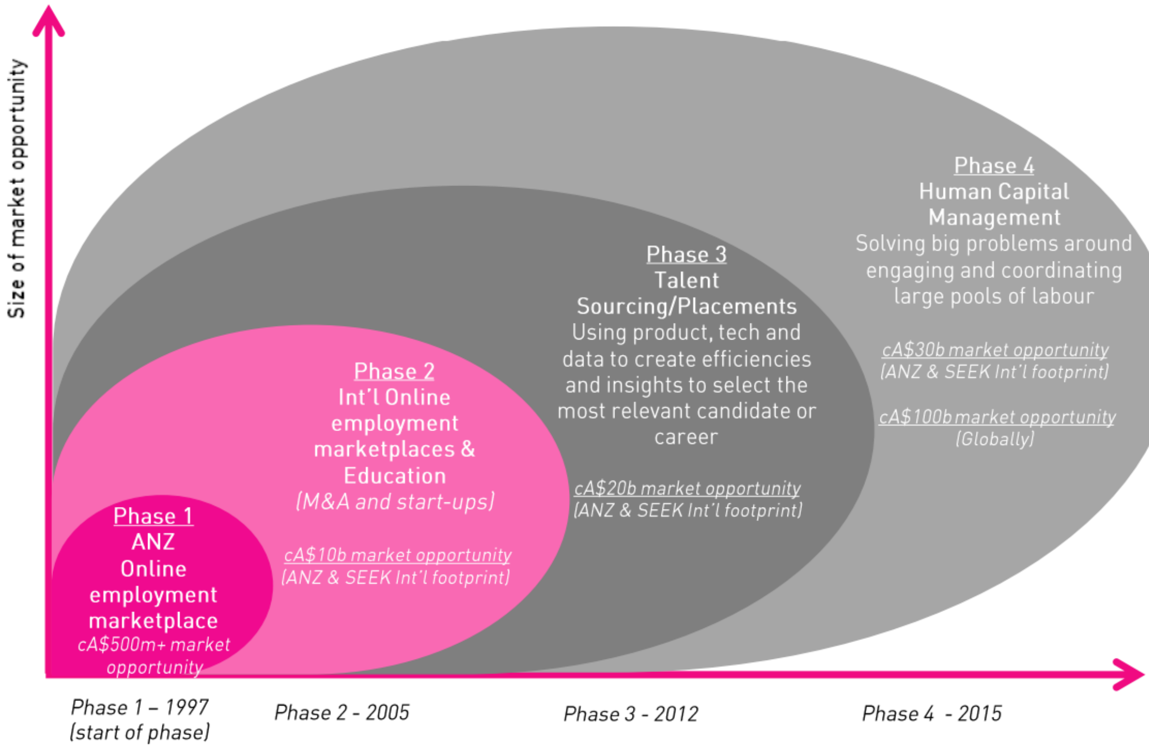
For NIB the objectives have been clear and consistent, invest ahead of the curve without jeopardizing the long term future of the business, underpinned by the ARHI business sustaining market leading customer growth.

SEEK

Perhaps the most outspoken CEO defending the importance of investing has been SEEK leader and co-founder Andrew Bassat. We profiled the business in our March 2015 Quarterly Newsletter, focusing on the long road taken by management in building the group's formidable offshore online employment operations.

Today, these businesses are contributing to the company's impressive earnings profile but there have been periods where a refocus was called for. The danger to any organisation is one of complacency and for SEEK this came in the form of social networking site LinkedIn. It was a wake-up call that having been the online disrupter to the print industry, SEEK was at risk of being itself disrupted. This led to a renewed effort to put investment first, largely at the expense of profits today.

Figure 1: SEEK Market Opportunities



At the group's 2016 results presentation as illustrated in *Figure 1*, the company provided an insight into the evolving market opportunities that go well beyond the original job seeker online market. That market opportunity is today valued at $500m, although largely scoped out. Beyond this the group identifies the international online employment and education market, followed by the newest phase of growth, being the placements market and finally an evolving sector, one termed Human Capital Management.

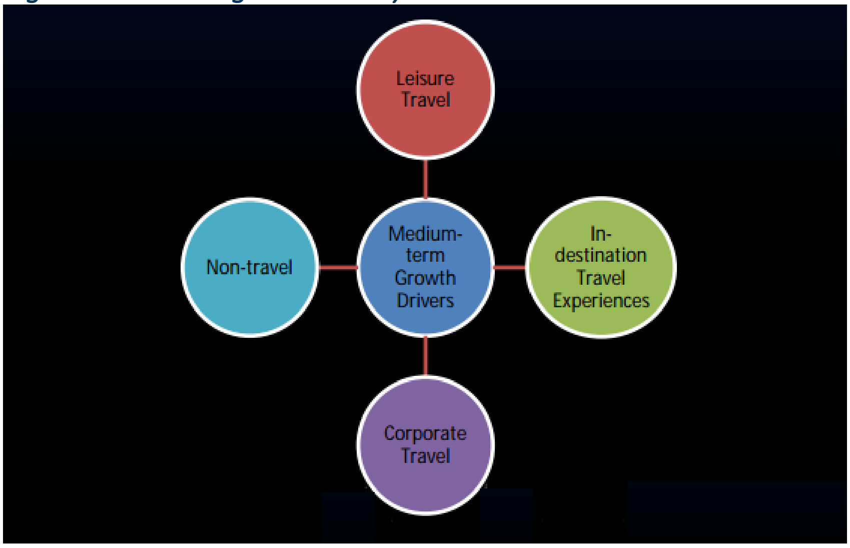
The success or otherwise in growing these new markets will be judged in future years. Suffice to say that a company that focuses on its core and is prepared to invest and morph its business in order to meet the changing business landscape is in the first instance traveling on the right path.

Flight Centre Travel Group

A business not dissimilar to SEEK has been the Flight Centre Travel Group, led by founder Graham Turner. From its origins the business has evolved both internationally and in its service offering. Far too many market commentators are quick to point out the deficiencies in the business model that is up against a growing array of online competitors, without acknowledging how well the group has adapted and invested throughout to meet the challenges.

At the recent Morgan's investor conference, management presented the path forward, with a business footprint out to 2022 and beyond. While most other companies typically speak of time zones out to 2020, picking a rather odd six-year future milestone is in keeping with their track record of thinking independently.

Figure 2: 2022 Flight Path: Key Growth Sectors



While bolt on acquisitions are playing a role, the business remains largely organic, focused primarily on travel. Management have identified four key areas of business input, namely; the ongoing development of leisure travel services, to become the global leader in corporate travel from its current top five position and the provision of complementary travel services, including tour operations. The final plank involves smaller investments in newer business lines that can benefit from the company's scale and executive experience.

Despite the challenges presented over the years, the company has grown total transaction value (TTV) in 20 of the past 21 years since listing. The company's evolution throughout the economic cycle is both an illustration of its success and an indicator of its ability to adapt.

Aristocrat Leisure

When CEO Jamie Odell was appointed back in 2008 to lead the business following a period of upheaval, investors were understandably unconvinced. In our June 2014 Quarterly

Newsletter we outlined the priorities as set out below, that Odell and his team wanted to achieve.

Right markets and segments: Focus on the most profitable markets and segments

1. Double the share of US participation gaming over five years.
2. Become more agile and customer led in Australia, to close the gap between ship share and installed base.
3. Manage volatility in Japan and achieve a minimum of 2 licensed games per annum.
4. Optimise Rest of World portfolio.
5. Exit low margin jurisdictions, products.

With the passing of time, along with a consistent commitment to product investment and sticking to the game plan, Aristocrat can rightly claim success. The business today finds itself in a very good place, with strong leadership in its core markets of Class lll and Class ll gaming machines in both Australia and the significantly larger U.S. market.

Management have exited the non-core markets and re-focused on the few that matter. Product investment has led to game leadership reflected in improving financial business metrics.

The recently announced resignation of CEO Odell and internal appointment of new CEO Trevor Croker is set to continue the trend that began in 2008. Business focus is the key starting point and Aristocrat have a clearly articulated strategy to invest in its people, the game design teams and taking market share in key product segments.

Investors who were initially unconvinced with Odell will no doubt seek the same assurances from Croker, however, our focus will be on whether management look to make any material changes to what has been a consistent and highly successful business focus.

James Hardie

The group's desire to deliver on its 35:90 business strategy is a testament to management's clear and articulated long term approach. We outlined our thoughts post our most recent visit to the U.S. in our September 2015 Quarterly Newsletter. Led by CEO Louis Gries since 2004, James Hardie has dealt with many setbacks along its stated desire of attaining market leadership in the fibre cement category.

Having achieved this goal with a circa 90% share, the company continues in its pursuit of fibre cement attaining a 35% share of the overall home construction market, from its current position of 18%. Most impressive has been the manner in which management have remained focused on growing from within. This organic focused approach, funded from existing cash flows is a slower but more rewarding outcome for all shareholders over the long run.

Even more appealing has been the candid manner in which the management team outlines both its successes and short comings. In more recent times, the shock resignation of future CEO Ryan Sullivan and manufacturing capacity issues flowing from a management misreading of forecasted market demand, has seen CEO Gries offer few excuses. This is how it should be and accurately reflects what business is all about - having a plan for success but with no guarantees attached.

Altium

A constant theme with many of the investments listed above are the involvement of a core group of executives, either as founders of the business or as outside appointees that have stayed the distance. Printed circuit board software design group Altium certainly fits this bill as we outlined in our December 2014 Quarterly Newsletter. Led by CEO Aram Mirkazemi, who joined the business in 1992, before departing in 1999 and subsequently returning in 2010.

The group's business transformation from an Australian grown software services group to one now based in the U.S. is illustrative of the product's growing profile and the industry's increasing appetite for digital technology solutions. Management have been transparent in their discussion with shareholders, having undertaken a thorough update at the most recent annual general meeting held in November.

Not dissimilar to James Hardie management, CEO Mirkazemi views the group's accession to market leadership as one predicated on its ability to stay the course and deliver on its clearly articulated product strategy and market execution plans. This involves both an organic growth profile, complemented by strategic acquisitions and industry partnerships. This has seen a step up in investment and greater capital commitment in building a direct sales force in the U.S. and now Europe.

The tailwinds supporting the group's path has also attracted other industry players, leading to what is often termed industry consolidation. This was borne out with the recent announcement regarding the acquisition of Altium's largest industry competitor Mentor Graphics for USD$4.5b, undertaken by German giant Siemens. While Mentor Graphics is a combination of two businesses, being chip design and boards system development, the trend of industry integration is ongoing. In this setting Altium is well placed to emerge as a dominant player.

Summary

The point of whether private or public is the right route, really comes down to the discipline of management. As we have tried to illustrate, our preferences are for companies that have the right business temperament to manage the public arena. Even the very best of companies struggle at points in time but ultimately those that play the long game, investing consistently along the way and importantly operate with some degree of competitive advantage are best placed for success. Our experience has underlined the importance of carefully evaluating those that we entrust with the management of our capital. ***SFM***

Standard & Poor's – Australia, time's up

In our last quarterly we wrote about the growing risk that Australia faced following the successive failures of previous Federal Governments to rein in our budget deficits.

Coinciding with the global financial crisis, the country moved into deficit in 2009. It has remained there ever since despite both Labor and Liberal Governments promising otherwise.

As we have highlighted, the issue facing Australia is of a structural nature, that won't be addressed by collecting more taxes from rising incomes or higher company profits. If anything the reality is that both personal income and company taxes need to come down in order to remain internationally competitive and provide sufficient incentives to strive for more.

While we are no big fans of the international rating agencies, the persistent pressure to see more done in tackling Australia's structural imbalance is gaining momentum. Standard & Poor's has been the most vocal, noting that the current outlook between revenue and expenses will not be corrected by merely passing current budget measures. As difficult as it is to get the current list of spending cuts through the parliament, the country will remain behind the eight ball until we take the necessary tough decisions that all governments are loath to act upon.

Failure to do so will result in a cut to our AAA credit rating and a likely drop in the Australian Dollar. While we may rejoice in a lower currency, the truth is that by not addressing the structural fiscal challenges, we run the more concerning risk of damaging our fiscal sovereignty.

The electorate should be under no illusion, though the country and its people are resourceful enough to shift, the lack of political leadership and ill-preparedness on all sides to accept necessary change will bite hard at a future time when the country is least prepared to deal with the fallout. ***SFM***

Voting - it does matter

A requirement of investing is significant time devoted to reading. We do not view this task as a burden. We do it because it is of interest and a necessity in keeping abreast of industry trends, company specific developments and assessing honesty in management reporting. In turn this can lead to a better understanding of both the business and people in charge, potentially leading to changes in previously held investment views.

Over the long run, the truly good performers stand out. For those investors who take the time and trouble to read the copious number of annual reports and remuneration statements, the benefits are tangible, despite the complexity that governs such documents. To this end, some outcomes are worth nothing.

Some businesses go to great lengths to educate their owners. Their annual reports are informative, remuneration structures sensible and coherent, accompanied by annual meetings that provide clarity and transparency to those who attend in person or by webcast. Not all shareholders who attend such meetings appreciate the legal complexities that govern such procedures.

Unfortunately, these meetings are also subject to hijacking by a select few, who all too often ask long winded questions, focusing on procedural matters or irrelevancies. The most contentious issues usually surround executive remuneration. The term "grey area", can easily be applied to the remuneration minefield that aims to decipher a multitude of performance treatments.

It has also fostered a whole industry of consultants and advisors whose role is to review and recommend how shareholders should vote. Many institutional shareholders who have found this task onerous, now outsource their voting to these groups. In many ways this makes some sense but a shareholder and a proxy advisor are not the same. It is a disturbing trend with unintended consequences.

A case in point being the recent decision by proxy advisors to direct their votes against the remuneration report and vesting of performance rights to the chief executive of blood plasma group CSL. It was the first strike against the group, very much driven by the displeasure surrounding the substantial rise in CEO Perreault's salary package, which rose from USD$5.8m to USD$8.1m.

Of this rise, USD$1.3m was a short term cash bonus earned on meeting company specific milestones, while base salary rose from USD$1.77m to USD$1.85m. To put this into company context, CSL is now valued at AUD$48b, turning over USD$6b, conducting business in over 60 countries, employing more than 16,000 employees and earnings over USD$1.2b in net profits.

Since listing in 1994 the company has delivered compound annual growth in net profits of 23% while its share price has done a little better, growing at an annual rate of 25%. All this is not to say that we should close our eyes to excessive remuneration behaviour but of all the companies to pick on, CSL is certainly not the one. In fact, anyone who even remotely understands the complexity and duration of taking a drug to market would acknowledge the extraordinary achievements that this and previous executives have delivered.

A case in point being 2016, a year in which CSL secured approvals for the launch of five new products and continued with the integration of its 2015 acquisition of Novartis' influenza vaccine business. In doing so, management have invested significant capital upfront in the firm belief of generating long term returns.

The conclusion drawn by the proxy advisors in rejecting the CEO payment is short sighted and illustrative of external forces impacting board and management behaviour. Shareholders who do not engage or cast their votes run the risk of losing out too.

The "two strikes" rule began in 2011, allowing a board to be spilled if a vote of more than 25% against its pay report is received two years in a row. As such the threat of a potentially second no vote is now changing board behaviour, by engaging with proxy advisors and modifying contentious issues. This all sounds perfectly sensible but as we noted above, applying a cookie cutter approach to comparing companies is not the way to go. Similarly, voting against long standing board members for no other reason except tenure is both short sighted and ill-considered.

There is little doubt many aspects of company governance and remuneration structures could be improved upon. The fear we have with proxy advisors is the shift in power base from owners to paid, non-owners. ***SFM***

Creation, destruction, photos and a Liquid Biopsy

Creation, destruction? New technologies debunk and sometimes totally replace older accepted standards. It's an enticing prospect for investors in cutting edge technology. However, investments rarely pan out as expected particularly in the short run. Sometimes separating hype from opportunity can be the most difficult task.

Eastman Kodak faced ruin, and eventual bankruptcy in 2012, from digital photography, a technology it invented in 1975. Not only was there no hype in the lab back in '75, Kodak management apparently had zero interest in pursuing a lengthy development horizon estimated by inventor Steven Sasson to be 20 years.

Today, the re-emergence of Ektachrome by Kodak Alaris, a company that emerged from the ashes of Eastman Kodak, completes the full circle. This is a type of film used for producing slides. It was first released by Kodak in 1946. Photographic purists are celebrating its return in 2017.

Much hype surrounds the emergence of the Liquid Biopsy (LB), a relatively new and potentially disruptive corner of science. A LB is a test done on a sample of blood to look for cancer cells from a tumor circulating in the blood or for pieces of DNA from tumor cells that are in the blood. We are merely observers, not experts. In this article we have corralled snippets, or "mashed up" articles[1], from several journals in an attempt to give some insight into this exciting research.

The LB is an emerging technology that seeks to broaden the scope and sensitivity of blood-based cancer diagnosis. Since they usually require only a blood sample (vs. solid tissue) LBs are primarily non-invasive. And thanks to the development of highly specific gene-amplification and sequencing technologies LBs access more biomarkers relevant to more cancers than ever before.

Traditional tissue biopsies range in cost from USD$15,000 to USD$60,000, depending on whether invasive surgery is required, the level of sample preparation, pathology services, and follow-on genetic tests. Since so many hands are at play, traditional biopsies have a failure rate of approximately 25%. Additionally, biopsy tissue from tumors is simply not available for monitoring patient response over the course of a treatment, when LBs become the only feasible option.

We understand the cost of a LB was USD$40,000 several years ago. It was apparently a test reserved for billionaires. Today at USD$4,000 it remains out of reach. The potential is that these type of tests will gain traction at USD$400 within the short term. Observers expect the price to decline rapidly from there as it becomes a gold standard in testing.

1 **Cancer bio markers written in blood.** *Nature. Ed Yong 30 July 2014*
Liquid Biopsies: Miracle Diagnostic or Next New Fad? *Angelo DePalma PHD 28 Jun 2016*
The Promise of Liquid Biopsy Technology. Novella Clinical

LBs seek out two major targets: circulating cancer cells (CTCs) and cell-free tumor DNA (cfDNA). CTC analysis focuses on isolating and expanding populations of rare cells for downstream analysis. cfDNA LBs identify multiple circulating tumor gene mutants at multiple time points.

LBs have generated great attention for their ease of use and applications across many different diseases and health conditions, such as non-invasive prenatal testing, transplant medicine, and oncology – far and away the most commercially lucrative market.

"Liquid biopsies will provide clinicians with faster, cheaper, broader, less invasive ways to assess cancer patients' clinical status, and help to deliver the right treatment for the right target without delay," says Dr. Chen-Hsiung Yeh, Chief Scientific Officer at Circulogene Theranostics (Birmingham, Alabama, USA). Yeh believes DNA-based LBs for multiple mutation profiles could become the gold standard for next-generation cancer management and precision medicine. *"Clinical tests employing cfDNA are inherently specific, sensitive, and capture both intra- and inter-tumor heterogeneity in real time,"* he adds.

As ever, there are caveats. Levels of ctDNA vary a lot from person to person and can be hard to detect, especially for small tumors in their early stages. And most studies so far have dealt with only handfuls or dozens of patients, with just a few types of cancer. Although the results are promising, they must be validated in larger studies before it will be clear whether ctDNA truly offers an accurate view — and, more importantly, whether it can save or improve lives. *"Just monitoring your tumor isn't good enough,"* says Luis Diaz, an oncologist at Johns Hopkins University in Baltimore, Maryland. *"The challenge that we face is finding true utility."*

If researchers can clear those hurdles, LBs could help clinicians make better choices for treatment and to adjust those decisions as conditions change, according to Victor Velculescu, a genetic oncologist at Johns Hopkins. Moreover, the work might provide new therapeutic targets. *"It will help bring personalized medicine to reality,"* says Velculescu. *"It's a game-changer."*

In 2012, Charles Swanton and his team at the Cancer Research UK London Research Institute sequenced DNA from a handful of kidney tumors. They expected to find a lot of different mutations. The breadth of genetic diversity within even a single tumor shocked them. Cells from one end of a tumor differed from those at the other end and only one-third of the mutations were shared throughout the whole mass. Secondary tumors that had spread and taken root elsewhere in the patients' bodies were different again.

The results confirmed that the standard prognostic procedure for cancer, the tissue biopsy, is woefully inadequate. It's like trying to gauge a nation's behaviour by surveying a single street. A biopsy could miss mutations just centimetres away that might radically change a person's chances of survival. And although biopsies can provide data about specific mutations that might make a tumor vulnerable to targeted therapies, that information is static and bound to become inaccurate as the cancer evolves.

Swanton and his team laid bare a diversity that seemed insurmountable, *"I am still quite depressed about it, if I'm honest,"* he says. *"And if we had higher-resolution assays, the complexity would be far worse."*

But researchers have found ways to get a richer view of a patient's cancer, and even track it over time. When cancer cells rupture and die, they release their contents, including circulating tumor DNA (ctDNA): genome fragments that float freely through the bloodstream. Debris from normal cells is normally mopped up and destroyed by 'cleaning cells' such as macrophages, but tumors are so large and their cells multiply so quickly that the cleaners cannot cope completely.

By developing and refining techniques for measuring and sequencing tumor DNA in the bloodstream, scientists are turning vials of blood into 'liquid biopsies' — portraits of a cancer that are much more comprehensive than the keyhole peeps that conventional biopsies provide. Taken over time, such blood samples would show clinicians whether treatments are working and whether tumors are becoming resistant.

Scientists first reported finding DNA circulating in human blood in 1948, and specifically in the blood of people with cancer in 1977. It took another 17 years to show that this DNA bore mutations that are hallmarks of cancer — proof that it originated from the tumors.

The first practical use of circulating DNA came in another field. Dennis Lo, a chemical pathologist now at the Chinese University of Hong Kong, reasoned that if tumors could flood the blood with DNA, surely fetuses could, too. In 1997, he successfully showed that pregnant women carrying male babies had fetal Y chromosomes in their blood. That discovery allowed doctors to check a baby's sex early in gestation without disturbing the fetus, and ultimately to screen for developmental disorders such as Down's syndrome without resorting to invasive testing. It has revolutionized the field of prenatal diagnostics.

"Cancer has been slower to catch on," says Nitzan Rosenfeld, a genomicist at the Cancer Research UK Cambridge Institute. This is partly because tumor DNA is much harder to detect than fetal DNA. There is typically less of it in the blood, and the amounts are extremely variable. In people with very advanced cancers, tumors might be the source of most of the circulating DNA in the blood, but more commonly, ctDNA makes up barely 1% of the total and possibly as little as 0.01%. Early sequencing technologies were not up to the task of detecting it — at least, not consistently or reliably enough to use ctDNA as a biomarker.

But the past decade has brought sensitive techniques that can detect and quantify minute amounts of DNA. For example, an amplification method known as BEAMing — which fastens circulating DNA to magnetic beads that can then be isolated and counted — can detect ctDNA even if it is outnumbered by healthy cell DNA by a factor of 10,000 to 1.

Genetic oncologists Bert Vogelstein and Kenneth Kinzler at Johns Hopkins developed the technique and in 2007 they described using it to track ctDNA in 18 people who were being treated for bowel cancer. After surgery, the patients' ctDNA levels fell by 99% but in many cases the signal did not disappear completely. In all but one of the people with detectable ctDNA at the first follow-up appointment, the tumors eventually returned. None of the people with undetectable levels after surgery experienced a recurrence.

These results suggested that ctDNA can reveal how well a patient has responded to surgery and whether they need chemotherapy to finish off any lingering cancer cells. Researchers soon found similar results for other types of cancer. Rosenfeld and his Cancer Research UK colleagues James Brenton and Carlos Caldas showed that ctDNA provides a precise portrait of advanced ovarian and breast cancers. And in the largest study yet, Diaz and other members of the Johns Hopkins group detected ctDNA in at least 75% of patients with advanced tumors, in organs as diverse as the pancreas, bladder, skin, stomach, esophagus, liver, head and neck. Brain cancers were a notable exception, because the blood–brain barrier stops tumor DNA from reaching the bloodstream.

The potential for LB technology within oncology research spans many applications such as screening patients for trial enrolment, selecting treatments, monitoring medication effects such as drug resistance or tumor evolution, identifying recurrent or minimally residual disease and, ideally, finding cancers in their most nascent stages and informing prognoses. But this minimally invasive technology is so new regulatory agencies are drafting the criteria for market clearances.

To date, only one LB test, Roche Molecular Systems' "cobas" EGFR Mutation Test v2, has received approval from the FDA. This test was approved in the U.S. on 1 June 2016 and launched in countries that accept the CE mark in September 2015. It is a companion diagnostic for treatment decisions for non-small cell lung cancer (NSCLC) patients.

According to LB-purchasing decision makers surveyed in January 2016 by Frost & Sullivan, the leading applications for LBs are projected to be therapy monitoring (83.3%) and diagnosis of disease recurrence (76.4%). Nearly half (48%) of the respondents stated intentions to fully adopt the technology as an adjunct to tissue biopsies, a goal driven because of its potential to serve as companion diagnostics, determine tumor heterogeneity or clonality, detect acquired-drug resistance and screen for early cancer and yield prognoses.

At least three dozen companies are currently developing LB diagnostics. The commercial market valuation is growing because of the breadth of potential cancer applications, which when considered with non-cancer applications, such as non-invasive prenatal testing (NIPT) and transplantation, is projected to grow beyond USD$10 billion by 2020.

Former Illumina CEO Jay Flatley has predicted the market opportunity is "somewhere between USD$20 billion and USD$200 billion." His estimate reflects the robust enthusiasm of the investment community, evidenced by three multimillion dollar funding rounds that closed in the first 10 days of January 2016.

These are big numbers but the hurdles that remain are also numerous. In fact, we could have filled pages with them. It's clearly too early to provide a definitive conclusion on the LB.

Our simple take is that it is real and will be a driver of medical prognosis into the future. Medicine is no doubt becoming more personalised. It may well be that the future is not all about gold standards but rather small patient populations. This has implications for the likes of Sirtex Medical and other players in oncology and for that reason alone the Liquid Biopsy has our interest. ***SFM***

Company visit diary December 2016 Quarter

October

IQE	Intueri Education Audit/ASQA Conference Call	05/10/2016
BVA	Bravura Pre-deal investor education briefing	06/10/2016
ING	Inghams Pre-deal investor education briefing	07/10/2016
GBT	GBST Holdings Conference Call	12/10/2016
SEK	SEEK Management Meeting	17/10/2016
BVA	Bravura Management Meeting	17/10/2016
COH	Cochlear 2016 Annual General Meeting	18/10/2016
ASG	Autosports UBS Management Meeting	19/10/2016
BAP	Bapcor 2016 Annual General Meeting	21/10/2016
GBT	GBST 2016 Annual General Meeting	24/10/2016
SRX	Sirtex Medical 2016 Annual General Meeting	25/10/2016
RMD	Resmed 2017 Q1 Conference Call	26/10/2016
TOX	Tox Free Solutions Morgan Stanley Management Meeting	26/10/2016
BKL	Blackmores 2016 Annual General Meeting	27/10/2016
CBL	CBL insurance Group Deutsche Bank Management Meeting	27/10/2016
ACX	Aconex Management Meeting	27/10/2016
REH	Reece Group 2016 Annual General Meeting	27/10/2016
BKL	Blackmores 2017 Q1 Conference Call	27/10/2016
SGR	Star Entertainment Group Conference Call	28/10/2016
WOW	Woolworths 2017 Q1 Conference Call	28/10/2016

November

NHF	NIB Holdings 2016 Annual General Meeting	02/11/2016
IFM	Infomedia 2016 Annual General Meeting	03/11/2016
QUB	Qube Holdings UBS Management Meeting	07/11/2016
ACX	Aconex UBS Management Meeting	07/11/2016
GBT	GBST UBS Management Meeting	07/11/2016
BAP	Bapcor UBS Management Meeting	07/11/2016
VRT	Virtus Health UBS Management Meeting	07/11/2016
OSH	Oil Search UBS Management Meeting	08/11/2016
BAL	Bellamy's Australia UBS Management Meeting	08/11/2016
A2M	A2 Milk Company UBS Management Meeting	08/11/2016
NHF	NIB Holdings UBS Management Meeting	08/11/2016
BKL	Blackmores UBS Management Meeting	08/11/2016
CSL	CSL UBS Management Meeting	08/11/2016
RHC	Ramsay Health Care UBS Management Meeting	08/11/2016
REA	REA Group 2017 Q1 Conference Call	08/11/2016
SGM	Sims Metal Management 2016 Annual General Meeting	09/11/2016
VRT	Virtus Health 2016 Annual General Meeting	09/11/2016
RMD	Resmed CFO briefing UBS	09/11/2016

Panel	Fintech Panel UBS Presentation	07/11/2016
VHT	Volpara Solutions Management Meeting	09/11/2016
COH	Cochlear Management Meeting UBS	11/11/2016
RWC	Reliance Worldwide Corporation 2016 Annual General Meeting	11/11/2016
IPD	Impedimed 2016 Annual General Meeting	14/11/2016
OFX	OFX Group 2017 H1 Conference Call	15/11/2016
AGI	Ainsworth Gaming Technology 2016 Annual General Meeting	15/11/2016
IRE	IRESS Management Meeting	15/11/2016
OFX	OFX Group Management Meeting	15/11/2016
IPD	Impedimed Management Meeting	15/11/2016
IPH	IPH 2016 Annual General Meeting	16/11/2016
NVT	Navitas 2016 Annual General Meeting	16/11/2016
OFX	OFX Group GS Management Meeting	16/11/2016
IPD	Impedimed SOZO Demonstration	16/11/2016
RMD	Resmed 2016 Annual General Meeting	17/11/2016
JHX	James Hardie Industries 2017 Q2 Conference Call	17/11/2016
ALU	Altium 2016 Annual General Meeting	18/11/2016
ALU	Altium Tech Presentation	18/11/2016
BRG	Breville Group Annual General Meeting	21/11/2016
FPH	Fisher & Paykel 2017 H1 Results Briefing	22/11/2016
TNE	Technology One 2016 Results Conference Call	22/11/2016
RWC	Reliance Worldwide Corporation Management Meeting	22/11/2016
SEK	SEEK 2016 Annual General Meeting	24/11/2016
IFL	IOOF 2016 Annual General Meeting	24/11/2016
SOM	Somnomed 2016 Annual General Meeting	24/11/2016
MYO	MYOB Group Investor Day	25/11/2016
PXS	Pharmaxis Company Briefing	25/11/2016
SRX	Sirtex Medical R&D Briefing	28/11/2016
FPH	Fisher & Paykel Healthcare Management Meeting	28/11/2016
ALL	Aristocrat Leisure 2016 Results Conference Call	30/11/2016

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CSL	CSL R&D Investor Open Day	01/12/2016
CSL	CSL UBS Management Meeting	01/12/2016
ALL	Aristocrat Leisure Management Meeting	01/12/2016
QUB	Qube Holdings Management Meeting	02/12/2016
ORG	Origin Energy IPO Conference Call	06/12/2016
OFX	OFX Group 2017 H1 Results Briefing	08/12/2016
TNE	Technology One Management Meeting	13/12/2016
DMP	Domino’s Pizza Enterprise Management Meeting	14/12/2016
SRX	Sirtex Medical Management Meeting	15/12/2016