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As this is the last report of the year, and given the PIPA Global research team's move to London, we allowed ourselves to go a little deeper into the issues and ideas that caught our attention in 2014, reaffirming the values that are absolutely essential in this process.

As always, the idea is to shed more light on our thought process. In order to facilitate organization and reading, we have structured the report into sections so that readers can concentrate on what interests them most.

Focus is vital in order to achieve operational efficiency, although a holistic approach is equally essential for effective analysis. An understanding of human nature and its intangible aspects obtained through the arts, has also often proved valuable in achieving successful returns.

As of this quarter, we will be including a new regular section called "Random Bits". As with the "Miscellaneous" section, "Random Bits" are small bullets containing information we consider relevant and thought-provoking. The difference is that while "Miscellaneous" focuses on more qualitative and philosophical issues, "Random Bits" focuses on quantitative information.

Happy reading!

PIPA GLOBAL REPORT

SURPRISE, SURPRISE! — ONE MORE TIME

Once again, this year showed how so many smart people can get it wrong, with most hedge funds generating negative returns. Nobody, to our knowledge, predicted the slide in oil prices, even though we raised the issue in our report for the first quarter of 2013¹ (even a broken clock is right twice a day). Many investors also bet on the falling of the U.S. stock market and an increase in long-term interest rates, neither of which happened.

This is why we put greater emphasis on understanding people rather than the famous market forecasts. In our opinion, the best market prediction came from John Pierpont Morgan, who, when asked about the market behaviour, replied “it will fluctuate”. As we never tire of repeating: we believe people should concentrate on finding good businesses run by competent people whose interests are aligned with their own, and at reasonable prices.

ANALYSIS

The first finding worth noting about the year is that most of the companies we have followed for a longer time period had better stock performances than the ones that we started to study recently. This helps build our convictions regarding our preferred cases.

What went wrong

Keynes would have said that “When the facts change, I change my mind. What do you do?” This renowned phrase is particularly apt here.

Tesco

The investment case in Tesco, in our opinion, was based in the strength of its position in the British retail market, its excellent real estate assets, its pioneering online segment, its small but attractive financial operation, and its brand credibility and penetration. Amid the prevailing skepticism in relation to the “big business”, the fundamentals could result in a powerful combination. However, it all counted for nothing when the company disclosed an accounting fraud.

Since it was such an important company, the media repercussions were immense and the cost to Tesco’s reputation was huge. As if that was not enough, the company was also dealing with the fact that (i) it has a new CEO, (ii) its discount competitors ALDI and ASDA are engaging in a strong price war “at the bottom end”, (iii) Waitrose has been growing and doing exceptionally well “at the top end”, (iv) Ocado, which we think is a badly-run micro- Amazon, has been creating confusion in the online scenario; and, last but

¹ Perspectives – “We are more optimistic regarding the medium and long term. A good goalkeeper needs luck and it appears that the cyclical nature of energy prices (essentially tied to oil prices) are beginning to help. We are by no means specialists in this area, but we do know people who have been working in it for years. The main indication is that exploration in North America, both of shale oil in Canada and shale gas in the United States is growing at an accelerating pace – to the point of turning the U.S. into a net oil and byproduct exporter. The reports emphasize that infrastructure investments are occurring at “Chinese speed” and that the concrete effects will become more apparent shortly. Many of these effects are predictable but, as always, there are others that are just as unpredictable. One of the strongest and most immediate is a welcome deflationary pressure just when the “China Effect” is beginning to flag and the central banks are forced to look again at their zero interest rate policy. Another effect, less immediate and less probable, is the greater separation of the United States and the Middle East, which may have important (and unforeseen) consequences.”

not least, (v) Buffett, who held a stake in the company, announced the sale of a relevant interest.

PDG Realty

PDG Realty is a Brazilian real estate developer created in the early 2000s by an exceptionally competent team (now Vinci Partners), which rapidly overtook its competitors, but made a series of mistakes and was caught by the crisis, as were a good number of other market participants. The founder, investors, and the original management team had already left the company as soon as the crisis hit in 2010. In 2012, however, Vinci Partners reacquired a controlling interest and introduced a new management team with a successful track record.

Based on its history and on expectations that President Dilma Rousseff would encourage the construction industry in order to help her re-election, many investors acquired a small position, which turned out to be a bad idea. The company's situation was much worse than previously anticipated by most (actually even worse than the new management imagined) and major write-offs proved necessary. In addition, thanks to its usual blundering, the government failed to ignite the economy.

This served to teach investors a lesson: being close to the market, familiar with the management team and controlling shareholders, and encountering aligned incentives sometimes are just not enough. Real estate development and soaring debt ratios are

a toxic combination. Investors should have followed Warren Buffett's advice: "When a management with a reputation for brilliance tackles a business with a reputation for bad economics, it is the reputation of the business that remains intact." In addition, macro/political bets are no more than that: bets.

IBM

IBM caught our attention for a number of reasons: the attractive price, the high switching cost for its customers and its capital allocation strategy of disposing of capital-intensive businesses with low margins and aggressively returning capital to shareholders, both in the form of dividends and share buybacks. Also, one cannot ignore the fact that Buffett had acquired USD10 billion in IBM common shares in 2011, equivalent to around 5.7% of the company.²

On the other hand, three crucial factors worry us: management quality, corporate culture and incentives – not that they were really bad, but they failed our screening test.

As with Amazon, we have a certain difficulty with the numbers. There are differences, however. First, Amazon is clear about its intention of providing us with as little information as possible, while IBM clogs us with data, taking political correctness to the limit, so we eventually catch glimpses of disturbing facts and things that are impossible to understand. Second, Amazon has proved on various occasions that if it has to do something that needs to be done, even if it

² This stake has increased to slightly more than 7% due to share buybacks.

ruins the numbers, it will not hesitate. Meanwhile, IBM was stuck in its much talked about guidance³. Finally, it is worth noting that Bezos holds almost 20% of Amazon's common shares, while Ginni Rometti barely appears as an IBM shareholder⁴.

Clearly, leveraging the company to repurchase shares can make sense, especially if you take on debt at a low cost, but the scenario changes when net debt is USD 35 billion and rising and estimated revenue is USD 90 billion and falling. This equation left us increasingly uncomfortable with the case. First, we have to remember that interest rates will begin moving up any time now. Second, while IBM's revenues (most of which B2B) are on the way down, Microsoft's and Amazon's keep on growing. Although Watson, an IBM artificial intelligence initiative that may prove important in the future, may be one way out, given the current environment for disruptive technologies, it seems that luck is not in its side. You just have to look at what companies like Amazon, Microsoft, Adobe and Google have achieved with "cloud" businesses, what SAP has done with "in memory" database processing, or what VMware has accomplished with software defined networks to see that while IBM is talking about stuff, others are doing it...

The strength of the case is Buffett's position. Anyhow, despite our respect for his opinions, we know that everyone makes mistakes from time to time. That may not be the case here, but he could decide to inject

more capital and/or exchange his shares for preferred shares plus warrants (his current "classic package"). In this case, those holding common shares may end up in a worse situation.

Conclusion

Clearly, these three companies and their shares may perform well in the future (even in the short term), but one's role should not be to hope everything will go well, but to strictly follow a philosophy that generates certain checkpoints. If a company fails any of these, it should be dismissed, albeit temporarily, given that timely changes may reestablish the case. Knowledge generated over time is always advantageous –know what you like and what you dislike in each case. In any event, we would prefer to take advantage of one of the benefits of the interchangeability of money: you don't have to recoup it in the same form that you lost it...

Now let's move on to the happier facts.

What went right

Amazon

We continue to think that this is one of the most interesting investment cases of our lifetime.

Despite the massive uproar triggered by the third quarter results, in our opinion the most important event in the quarter for Amazon was Alibaba's

³ In 2010, the then CEO Sam Palmisano established an EPS target of USD 20 by the end of 2015. Ginni Rometti, his successor, pursued this goal tirelessly until October 2014, when, recognizing its impossibility, she abandoned it without offering another target.

⁴ According to Forbes, she has 716 shares, substantially less than the 2,580 held in 2008 ... (excluding options and RSUs).

IPO. There are two main reasons for that: first, the visibility that the company obtained from the event and second, the fact that, with shares traded in the U.S., it has a market cap of approximately USD 260 billion, almost double that of Amazon. Consequently, Amazon now has a strong e-commerce competitor and that is clearly something to stop and think about. Another recurring question is why, despite all its investments and discipline, the company, and therefore its shareholders, have not yet achieved significant financial results.

At this point, it is worth looking at another firm that is among the most interesting we have studied (although it is not publicly traded): IKEA. Ingvar Kamprad founded the company in 1943 and has been building its competitive advantages and refining its business model ever since. In 1964, 21 years after its creation, IKEA's annual revenue was EUR 25 million; in 2013, 49 years later, revenue exceeded EUR 28 billion, profitability was around EUR 3 billion and Kamprad had become one of the richest men in the world (before donating most of his wealth to a foundation). What interests us about IKEA is that it has invested in innovative concepts in a disciplined manner for decades (flat packaging, global sourcing, etc.), generating competitive barriers that others would find very difficult to overcome.

Returning to Amazon, a company managing annual

growth of around 20% with revenue bordering USD 100 billion will always encounter obstacles on the way, especially given the diversity of the new initiatives. The Fire Phone fiasco is a typical example.

In the long term, however, despite the stumbles, it is hard to imagine a company so well-positioned.

One aspect that highlights the company's management complexity and competitive strengths is its fulfillment centers. The company has invested more than USD 20 billion in 155 of these centers, although most of this came from tax benefits and incentives. Of these, 90 are located in the U.S. and the pace remains strong. A worthwhile three-minute investment is to watch the TIME magazine video that shows the operations of one of them⁵. They are highly automated, partially due to the acquisition of KIVA Systems, a robot manufacturer, and to the decision of developing proprietary technology dedicated to the specific challenges of the company, including the management of third-party inventories and the dispatch and rapid delivery of small packages (even on the same day). In order to have an idea of the competitive advantage these facilities represent, WalMart has decided to develop its own centers (geared exclusively to the internet), three of which are already in place...

A pleasant surprise for the company (and most of the economic agents) in 2014 was the decline in oil prices, which positively impacted distribution costs.

⁵ <https://www.youtube.com/watch?v=3eQAFVetNGI>. While on the subject, we strongly recommend the following video which shows the "dance of the robot" in the company's new eighth-generation fulfillment centers, dedicated to light items: <https://www.youtube.com/watch?v=tMpsMt7ETi8>. The images once again raise the question of who has the scale to compete with this.

Obviously, oil prices are perfectly capable of staging an equally surprising turnaround. Although what matters most in the long run is that the company has the most efficient distribution system, this will definitely help in the short term, given that savings on fuel will mean more cash for consumption.

Last but not least, it is worth watching Bezos' interview with Business Insider⁶. We have listed some of the most pertinent comments below:

"We don't meet with our biggest investors. We meet with investors who have low portfolio turnover. Many investment funds have very high portfolio turnover. They're not really investors — they're traders. There's nothing wrong with that: it's just a different thing. Where you are going to spend your time and your energy is one of the most important decisions you get to make in life. We all have a limited amount of time, and where you spend it and how you spend it is just an incredibly levered way to think about the world. If you're going to spend time explaining the company, you should do it with people who are long-term investors, rather than traders. That's our point of view."

"My main job today: I work hard at helping to maintain the culture."

"I'm not going to be here forever. Many of the traits that make Amazon unusual are now deeply ingrained in the culture. In fact, if I wanted to change them, I couldn't. The cultures are self-reinforcing, and that's

a good thing."

"The most important thing to observe is that books don't just compete against books. Books compete against people reading blogs and news articles and playing video games and watching TV and going to see movies."

"Books are the competitive set for leisure time. It takes many hours to read a book. It's a big commitment. If you narrow your field of view and only think about books competing against books, you make really bad decisions. What we really have to do, if we want a healthy culture of long-form reading, is to make books more accessible."

As much delighted we may be with Bezos and all of his achievements, we always question ourselves about the risks and the extent to which reality and the numbers are in line with our basic assumptions. Every investment has built-in risks. The challenge is to build a portfolio comprising several opportunities with a good (and real) risk/return ratio and which are as uncorrelated as possible.

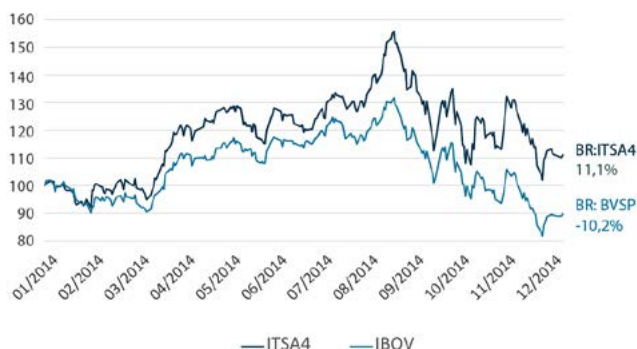
Itaúsa

Itaúsa is the proof that good well-run businesses can generate healthy returns even in adverse situations.

The Brazilian stock market, measured by the Bovespa Index, fell by 10.2% in U.S. dollars in 2014, mainly as a

⁶ <http://uk.businessinsider.com/amazons-jeff-bezos-the-business-insider-interview-2014-12>

result of the government's misguided policies, while Itaú's shares rose by 11.1%.

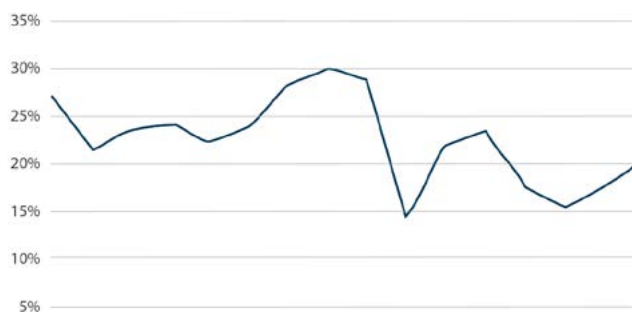


How can we explain this? After all, unlike most cases of outperformance, Itaú did not start the year with an especially low price. In fact, we almost always find the company's shares reasonably cheap.

A number of factors explain this performance, but the key determinant is the bank's team of ethical and highly-skilled executives, who think like engineers or, to put it bluntly, have a no-bullshit approach, certainly influenced by the bank's "builder" Olavo Setúbal.⁷

From this come the other factors – the fact that it is the largest private bank in Brazil, its conservative position, its attentive and flexible approach to lending, its increasing inroads into the investment banking area, and its peerless private banking operation, being the outright leader of a lucrative segment that has grown substantially in recent years. From a quantitative viewpoint, the results are clear, with ROE consistently above 15% and twice as much in favorable times:

ROE Itaúsa (1999-2014)



In the last 15 years, Itaúsa paid a total dividends of BRL 12.7 billion, comparable to its market cap of BRL 5.8 billion at the end of 1999 and BRL 58.1 billion at the close of 2014.

Danaher

Even without a major crisis, Danaher's price fell for most of the year, closing 10% down. In the meantime, our knowledge of the company increased, as did our understanding of the market's perception.

Analyzing Danaher is, in many aspects, like analyzing Berkshire, GE, or gas in a box, so to speak. By attempting to scrutinize and understand every detail of all its segments and components, analysts will spend a good deal of time and effort with decreasing marginal gains. And when they finally think they understand it, the company will have changed completely.

Of course we can assess the numbers, but they work as indicators and validators. What really counts is the vision, culture, strategy, execution, and alignment of

⁷ Anyone interested in learning more about the "founder in practice" of today's Itaú, without question one of the greatest and most successful of Brazilian entrepreneurs, should read *Desvirando a Página – a vida de Olavo Setúbal* by journalists Ignácio de Loyola Brandão and Jorge Okubaro.

the key executives. These are, and will continue to be, the drivers of results over time.

Danaher is a complex industrial conglomerate which most people have never heard of, although the name of some of its products may sound familiar. The company has undergone a continuous reorganization through mergers and acquisitions, becoming a giant with annual sales of USD 19 billion and free cash flow of USD 3 billion. Perhaps the best way of understanding the company is as an M&A machine whose focus on execution borders religious fanaticism.

It all began in 1983 when brothers Steve and Mitchell Rales acquired Diversified Mortgage Investors, then a struggling real estate investment fund, for USD 130 million, and merged it with two other companies to form Danaher. Steve was the visionary, while Mitchell focused on operations and execution. Both created and refined an operational culture based on Japanese manufacturing processes which they named the Danaher Business System (DBS). This system has gradually allowed them to delegate and focus more on crucial issues that shape the portfolio. They still own almost 13% of the company, valued at USD 60 billion, which makes us reasonably confident that they will continue to be fully aware of what is happening in the business⁸.

Most of Danaher's products and services conform to one of our favorite business models: selling critical

elements within a large value chain, resulting in excellent margins and pricing power.

One of the things that Danaher does very differently from a company like Berkshire, for example, is to make it clear that no business has a guaranteed place in the portfolio, and this is something we have mixed feelings about. On the one hand, it helps keep them all in a state of alert; on the other, it can lead to anxiety and low mutual confidence. However, it appears that the company knows how to maintain a good balance. As always, we don't argue with the numbers and have learnt that there is more than one path to success.

We are reassured by the depth and skill of the executive team. The company has a new CEO since the end of 2014, promoted from one of its divisions. Although it is still too early to say with absolute conviction, he appears to have gotten off to a good start. A key question for us is how the company will continue to attract talent in this highly competitive scenario.

There is something special about Danaher. In many ways it resembles a well-kept secret, perhaps due to the Rales brothers philosophy of discretion, the complexity of the company, or the fact that it does not fall into any of the traditional categories adopted by analysts and investors. On the other hand, its shares are rarely cheap, which shows that the few who know the company have the means to back their opinion with hard cash.

⁸ Both also hold a hefty position in another publicly-traded company, Colfax, dedicated to industrial products and services related to gas and fluid transmission and welding. It is much smaller than Danaher and is currently going through a relatively difficult phase of integrating "transformational acquisitions". Like most well-managed companies, we believe it will emerge from this process in an even stronger position. However, this may be the subject of a future report as we continue to learn about the company.

Recently, the company has reduced the pace of its takeovers and currently has sufficient funds to easily finance an acquisition of USD 10 billion. Although market analysts have been pressing for this (imagine the M&A fees!), we are impressed with the company's direct assurance that it will only do so when and if it makes sense. The market has also been pressing for a spin-off in order to make it easier to classify and understand the company. Once again, it states that this is not an option unless it benefits performance.

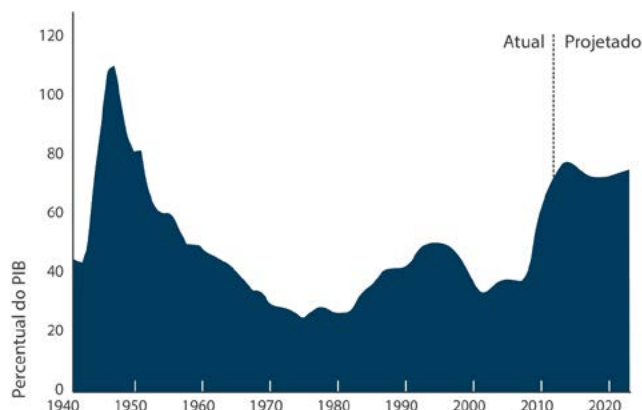
Gold Basket

The safe haven where we suggest keeping part of one's capital for times of crisis had a troubled year, with gold prices falling by 3.5%.

The fundamental assumptions for this case are the following:

1. There are risks we do not know about.
2. The perspectives for the major currencies and governments, following a few generations of impossible promises camouflaged by population growth (new generations paying the bills of the previous ones), are poor especially with the maturation of the developed countries' populations. In the U.S. alone, for example, the public debt has increased by eight trillion dollars since 2008, reaching eighteen trillion dollars without taking into account the cost of such entitlements as social security, medicaid,

medicare etc. A good means of evaluating this data is in relation to GDP. The following chart shows the U.S. public debt as a percentage of GDP, without entitlements, i.e. the tip of the iceberg only.



3. Demand for gold as a value reserve, especially in countries like China, India and Russia, is constantly increasing. At this point, it is worth remembering what JP Morgan used to say: "Gold is money. Everything else is credit."

There is also a regulatory detail which may push prices up. Gold held in custody by banks may be "allocated", when each bar belongs to a specific owner, or "unallocated", in which case it is recognized as an asset in the banks' balance sheets. On the one hand, the tightening up of the regulations since 2008 has increasingly required banks to strengthen their capital accounts; on the other, buyers of gold tend to be the most sceptical and averse to risk. The growing talk of credit risk in the media made more and more investors insist on allocating their gold positions

directly to their accounts. According to our research, the convergence of these factors has led to a shortage of available “unallocated” gold positions, which, among other matters, has increased hedging costs for consumers like jewelers. This trend has been evolving continuously and, in the lack of a regulatory change, should at least lead to an increase in rental fees and the pricing of options.

Microsoft

Unlike IBM, revenues continue to grow, especially in the important B2B category (12% in the fiscal year ended June 30 and 25% in the quarter ended September 30). The migration of various products to the subscription model, imagined and dreamed about by Bill Gates for two decades, is growing rapidly.

The company has shown tremendous discipline in allocating its capital, returning a large portion of its free cash flow to shareholders as dividends (USD 84 billion in the last 10 years) and buybacks (USD 117 billion in the same period). The big difference is that, unlike IBM, the company had a net cash position of USD 65 billion on September 30 last. The CEO's succession also seems to be going well, which we consider a crucial factor.

Volatility Book & Shorts

Here, we would like to emphasize a fundamental difference in how we see things in relation to the academic establishment, the regulators, and most

investment advisors who tend to associate volatility with risk. Obviously they have a point. If the price of an asset swings wildly and investors are forced to redeem it in a down market, or if they feel so insecure with the downturns that they are prepared to accept losses, volatility can indeed be a monster. However, if the positions are duly adjusted in order to preserve their staying power and the investor is not ruled by greed, volatility can be one of our best friends, offering repeated opportunities to buy low and sell high.

Apple: Xiaomis at the Gate

As Apple continues to stagnate in terms of major innovations – its latest model merely followed Samsung's initiative years ago of offering devices with larger screens – its competitors are snapping at its heels.

Xiaomi, a fast-growing Chinese manufacturer of Android-equipped smartphones, raised around USD 1.5 billion through a private placement with a valuation said to have exceeded USD 40 billion. The company's devices are very similar in terms of functionality to the iPhone and the Galaxy, but are substantially cheaper and follow the Chinese strategy of “national champions”. We are beginning to find some Xiaomi devices in emerging markets, where price sensitivity is much stronger.

Even though the company has been operating for only four years, its third quarter smartphone sales totaled

17.3 million units, 211% up from the same quarter in 2013, a figure only surpassed by Samsung and Apple.

Apple is also still suffering identity management glitches in regard to clients in transit, making downloads very difficult when they are outside their country of origin. Given that its customer base consists of high-income earners, this could be a problem.

The changes in cabling (power, video, lightning bolt connections, and iPhone connectors) have also been irritating long-time consumers who had created a “berthing infrastructure” for iPhones, big screens and external power sources.

The constant bugs and software updates are also a problem. If you install them, something is almost bound to go wrong - some other hardware or software will stop working and will need to be updated and you will invariably be alone. To understand what we are talking about, just try logging on to HP’s website to find specific drivers for OSX versions for your printer or scanner.

They are still producing excellent results and making money hand over fist, but the future may not be enough to maintain its market cap of almost USD 700 billion at the beginning of December.

STORYTELLING

In the last few months we began to devote some time to studying the art of storytelling in a deeper and more organized manner. All of us came across the subject to

a certain extent in our studies, but you just have to look at the success of certain authors and series to see that the use of selected processes and techniques that lead to better results is increasing.

The idea is not new to us. In fact, the reports that we have been sending out are precisely an exercise in storytelling based on internal discussions and constructive conflicts, and the outcome is a narrative that we trust will prove useful for clarifying how we think. The concept is vast (we have hardly scratched the surface of existing sources) and is constantly being developed and improved. Our experience and knowledge of the subject is predominantly empirical and we believe a little more forced study will help.

We can often apply classical storytelling situations to investment processes, as for example when one is looking for companies and some of them “make more sense than others.” In classic spy duo movies, there is always one partner playing the role of the sceptic. This is essential when exploring and refining ideas in order to solve mysteries, and especially effective when carried out in the right dose. Exaggerated scepticism turns into pig-headedness and the conflict becomes destructive rather than constructive. Integrity, mutual respect and intellectual honesty are essential.

Other common cases analogous to the process of investing in companies are situations in which one (or more) characters turn out not to be who we thought they were, triggering the famous twist in the tale that one should try very hard to avoid.

Over the millennia, storytelling has always played a key role in the development and success of groups and civilizations, not only due to its importance to the organization of ideas but also its preservation and reevaluation by others at the time or over time. But above all, from the Greek tragedies to Kahneman, storytelling is something that is directly linked to our process of analyzing companies, focused on incentives and the ability of people.

ABOUT CREATIVITY

We are always being asked how we come up with our cases and our answer is always longer and more comprehensive than people apparently expect.

Some market insiders use algorithms, Bloomberg screening tools and similar devices. In our opinion, however, these are merely elements for feeding a digestive system that requires other nutrients to remain healthy. When we are asked about the importance of traveling to know the companies first hand, we reply that most of the knowledge we gather from such visits does not come from what the executives say, but from the metadata. i.e. how they treat their staff, what kind of life they lead, the state of the working environment, etc. It also comes from the unstructured time (to say the least) of the trips, alone or accompanied by members of the team, in digressive situations, or even from visiting unfamiliar places, in short, living other realities.

We also set great store by the audience at company presentations, especially their age group and occupation (direct investors, buy-side analysts, investment bankers or sell-side analysts). In our experience, a conversation with a longstanding investor is one of the best sources. When we come across a casually-dressed individual who appears to be over 70, we go after him like a bullet!

The question “What on earth are you doing wasting time on art?” deserves a similar response. Clearly, unlike some renowned fund managers, we do not regard art as a type of asset. On the contrary, what we are looking for here is different ideas, either old or new, to understand how they arose, how they overcame the suspicions of the new and, in certain cases, how they became leading protagonists before falling into obscurity. Art introduces us to people who think differently, criticize the establishment and point to possible new realities, adding to our intellectual nourishment⁹. It may not be the bread and butter of day-to-day numbers and reports, but, in some cases, it supplies the seasoning that makes everything more interesting and leads to previously unimaginable combinations.

Scientific progress also throws up a number of interesting cases.

Reading simple and interesting books, such as that on the theory of electromagnetism developed by Faraday and Maxwell¹⁰ is an excellent example. Faraday was a

⁹ In this context, it is worth recommending *Playing to the Gallery* by the controversial British artist Grayson Perry, winner of the Turner Prize in 2003.

¹⁰ Faraday, Maxwell, and the Electromagnetic Field: How Two Men Revolutionized Physics — Nancy Forbes

consummate experimentalist and free thinker, while Maxwell was an obsessive mathematician, and the combination of their work led to the development of concepts and formulae that form the basis of current electronic technology. It is worth noting how often disparate personalities can complement one another to produce magnificent results.

In the example above, as with that of Marie and Pierre Curie, complementarity is a striking characteristic. Other cases, however, are notable for their lonely and obstinate struggles, as exemplified in the pleasing (and, for some, exciting) works *Fermat's Last Theorem*¹¹, *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time*¹² and *The Man Who Knew Infinity*, [KC2] on the life of Indian mathematician Srinivasa Ramanujan.

Fermat's Last Theorem, perhaps the most exciting book on science we have ever read, in addition to giving a brief summary of the evolution of mathematics and its major breakthroughs, tells the history of Andrew Wiles, who spent many lonely years in pursuit of an answer to a question raised more than three centuries previously for which there was no concrete indication that an answer existed.

Longitude tells the story of how John Harrison invented the chronometer, which allowed sailors to calculate their precise position at sea. In addition to

the obstinacy that is common to all the cases that fascinate us, there is the added element of a prize created by the British Crown that triggered a fierce race culminating in Harrison's success. This was one of the examples that made us create the IP Art Prize (PIPA).

In the case of Ramanujan, we are faced with a particularly dogged individual who, although (exceptionally) far from the major scientific centers in a town remote even by Indian standards in the nineteenth century, not only "reinvented the wheel", but also, because he was unaware of many of the then current mathematical theorems and notations, made significant advances, some of which little understood to this day, proving that "geography is often irrelevant."

Finally, we come to one of our greatest idols, Isaac Asimov. Recently, MIT Technology Review magazine published a text¹³ written by him in 1959 after he had taken part in some brainstorming sessions organized by the Advanced Research Projects Agency, seeking to generate "out-of-the-box" ideas on the subject of missile defense.¹⁴

Some excerpts are worth highlighting:

"The history of human thought would make it seem that there is difficulty in thinking of an idea even when all

¹¹ Fermat's Last Theorem — Simon Singh

¹² Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time — Dava Sobel

¹³ <http://www.technologyreview.com/view/531911/isaac-asimov-mulls-how-do-people-get-new-ideas/>

¹⁴ Asimov wrote the text after attending some sessions. He subsequently asked to leave in order to avoid access to confidential matters that could limit his freedom of expression.

the facts are on the table. Making the cross-connection requires a certain daring. It must, for any cross-connection that does not require daring is performed at once by many and develops not as a "new idea," but as a mere "corollary of an old idea."

It is only afterward that a new idea seems reasonable. To begin with, it usually seems unreasonable. It seems the height of unreason to suppose the earth was round instead of flat, or that it moved instead of the sun, or that objects required a force to stop them when in motion, instead of a force to keep them moving, and so on.

A person willing to fly in the face of reason, authority, and common sense must be a person of considerable self-assurance. Since he occurs only rarely, he must seem eccentric (in at least that respect) to the rest of us. A person eccentric in one respect is often eccentric in others.

Consequently, the person who is most likely to get new ideas is a person of good background in the field of interest and one who is unconventional in his habits. (To be a crackpot is not, however, enough in itself.)

Once you have the people you want, the next question is: Do you want to bring them together so that they may discuss the problem mutually, or should you inform each of the problem and allow them to work in isolation?

My feeling is that as far as creativity is concerned, isolation is required. The creative person is, in any case, continually working at it. His mind is shuffling his

information at all times, even when he is not conscious of it.

...

It seems to me then that the purpose of cerebration sessions is not to think up new ideas but to educate the participants in facts and fact-combinations, in theories and vagrant thoughts.

...

First and foremost, there must be ease, relaxation, and a general sense of permissiveness.

If a single individual present is unsympathetic to the foolishness that would be bound to go on at such a session, the others would freeze. The unsympathetic individual may be a gold mine of information, but the harm he does will more than compensate for that. It seems necessary to me, then, that all people at a session be willing to sound foolish and listen to others sound foolish.

...

For best purposes, there should be a feeling of informality. Joviality, the use of first names, joking, relaxed kidding are, I think, of the essence—not in themselves, but because they encourage a willingness to be involved in the folly of creativeness. For this purpose I think a meeting in someone's home or over a dinner table at some restaurant is perhaps more useful than one in a conference room.

HOW GOOGLE WORKS

Another interesting book we read in 2014 was *How Google Works*, by the company's former CEO, Eric Schmidt, and former Senior Vice President of Products, Jonathan Rosenberg. Initially, we were afraid it would be just another mish-mash of self-help for startup entrepreneurs and propaganda for Google, which, to a large extent it was. Nevertheless, we were encouraged to read it by a friend who said that it contained some seriously interesting stuff, and he was right – the chapters on hiring and managing creative people are worth the whole book. Also, for those interested in managing startups and people, *Zero to One*, by Peter Thiel, is very short and objective and definitely worth reading, as is *The Hard Thing About Hard Things*, by Ben Horowitz, which narrates the difficulties and decisions faced by startups and for which, according to the author, there are no MBA courses to prepare one for. Perhaps it is too broad a generalization, and, in some cases we disagree with the paths and decisions chosen by the author from the moral standpoint, but it is still an interesting read.

DECISION MAKING — PRACTICE MAKES (ALMOST) PERFECT

One of our favorite books on this subject is *Sources of Power* by Gary Klein. It may be “old” (1998), but many of its main ideas were brought to light again in the 2011 bestseller *Thinking Fast and Slow*, by Nobel Prize winner Daniel Kahneman. The book emphasizes the

role of experience in the decision-making process. A quick review of the book at Amazon's website by John M. Ford is worth reading:

Gary Klein is a cognitive psychologist who has “gone native,” shifting his focus from the laboratory to the messy world of firefighters, tank commanders, and other naturalistic decision makers. Their work environments are defined by “...time pressure, high stakes, experienced decision makers, inadequate information, ill-defined goals, poorly defined procedures, cue learning, context, dynamic conditions, and team coordination.” Instead of cataloguing their errors, Klein has identified the mental capabilities that help them succeed. His book presents these “sources of power” for our consideration.

These sources of power include:

- *Intuition depends on the use of experience to recognize key patterns.*
- *Mental simulation is the ability to imagine people and objects through transformations.*
- *Spotting leverage points means spotting small changes that can make a big difference.*
- *Experience can be used to focus attention on key features that novices don't notice.*
- *Stories bring natural order to unstructured situations and emphasize what is important.*

- *Metaphors apply familiar experiences to new situations to suggest solutions.*
- *Communicating intentions in a team helps members "read each other's minds."*
- *Effective teams evolve a "team mind" with shared knowledge, goals, and identity.*
- *Rational analysis plays an important role, but can be over applied.*

With decision-making, as with most other issues, practice makes perfect.

A DIGRESSION: SUNSET CLAUSE AND ZERO-BASED BUDGETING

We would like to present a brief digression on the tangle of laws, rules, and accounting barriers that we regard as highly harmful to economic activity and the credibility of the current systems, as well as some possible solutions. As with entitlements, the longer it takes to address the problem, the more it will impact a company's perspectives.

It is a continuation of our thoughts on "Optimizations", which we began to address in our fourth quarter of 2013 report and touched upon again at the beginning of 2014 in the section entitled "Standards and Switching Costs".

Starting with rapid definitions of what we understand to be the meaning of each term, we present a

critical and comparative analysis of the generally prevailing systems.

Sunset clauses are provisions included in laws or contracts which stipulate that they will be automatically terminated after a specified period of time. However, most laws and regulations remain in effect until they are pro-actively amended, updated and/or revoked. The by-product of this procedure involves situations that generate practical impossibilities.

Zero-based budgeting is a means of preparing budgets that starts from zero and in which each expenditure must be justified. This differs from the norm, whereby the previous budget is taken as the base line and only the changes have to be justified. Obviously this second model is substantially more intuitive, simple and convenient, since it is only natural to take the previous expenditure as the basis for discussing the precise amount of the additions or, in times of crisis, small reductions.

The major problem in both cases is that inertia, i.e. the passage of time without action or inquiry, is the natural state of all bodies and most people and this leads to pernicious effects. Laws and regulations accumulate without the necessary updates and reconciliations over time, while expenditures that have become superfluous and unnecessary are maintained indefinitely. In the final analysis, the answer in both cases is to break this inertia through

frequent reassessments in the light of changes in the overall situation, paying particular attention to two basic issues. The first is the assumption of bad faith as a principle and the second is to fight “past wars.” In any event, what appears to us to be essential is a set of simple, effective, clearly defined and transmitted principles and values. Examples from Scandinavia and New Zealand show that a good education based on such values can largely tame wild instincts.

We are talking practical issues here, not philosophy. In cases of public governance, they come within the scope of constitutions and, in private cases, organizational bylaws. In these cases, in contrast, frequent revisions must be avoided at all costs. Basic values and ethical standards should transcend individuals and generations, defining the culture and identity of each nation and organization.

Clearly, we are less certain that the best solutions to the problems in question are those presented, but we are absolutely certain that the current systems are harmful and unsustainable, given the complexity and the constant (and not always gradual) increase in costs and expenses.

In practical terms, the meaning of these digressions on questions related to the incompatibility of legal and regulatory standards and complexities is that,

despite the myriad technological advances that have generated massive productivity gains for some companies, the “macro” level of our “systems” is still riddled with inefficiencies (low hanging fruit) that must be addressed in order to generate higher economic growth and improve the allocation of society’s resources in general.

CAPACITY OPTIMIZATION

One issue that we’ve covered in past reports was the (none too silent) revolution of the mechanisms for optimizing idle capacity, ranging from the emergence of eBay, which generated millions of small-scale “amateur” retailers, through Craig’s List, the great “killer of the classifieds”, as well as Airbnb and Homeaway in the hospitality industry and finally to Uber, the great leap forward, which captured a leading position in a frequently used service and managed to raise USD 1.2 billion on a valuation of USD 40 billion¹⁵.

The most interesting aspect here is that, in all cases and in parallel with the amateurs who use the tool, groups of professionals rapidly arise to give the services critical mass and consistency, as can be seen in the following excerpt from the article *The Business Tycoons of Airbnb*, which appeared on November 25 in the NYT:

¹⁵ According to Fortune magazine, Uber is now more valuable than 359 of the 469 companies in the Fortune 500 list, or 77% of them. Just to put this in perspective, at current levels, the company is worth more than the following well-known names: Kraft Foods Group, Delta Air Lines, General Mills, CBS, Rite Aid, Macy’s, Viacom, Dollar General, Kellogg, KKR, Nordstrom, Halliburton Company, Archer-Daniels Midland Company, Omnicom Group, Charles Schwab Corporation, YUM! Brands, DISH Network, Aetna, Estee Lauder, Northrop Grumman Corporation, Kroger, Cardinal Health Aflac Incorporated, Hilton Worldwide Holdings, L Brands, Hershey Company, ConAgra Foods, Whole Foods Market, Boston Scientific Corporation, Harley Davidson, Hormel Foods, Dollar Tree, Starwood Hotels & Resorts, Dr Pepper Snapple Group, Campbell Soup Company, Best Buy, Clorox, Hertz Global Holdings, MGM Resorts and Mattel.

According to the office of the New York State attorney general, Eric T. Schneiderman, almost half of Airbnb's USD 1.45 million in 2010 revenue in the city came from hosts who had at least three listings on the site. There were only 119 of these users, a small minority, claiming a large share of the business.

Schneiderman suspects that many hosts are violating a law that forbids apartment residents from renting out their place for less than 30 days if they are not present.

The so-called sharing economy is supposed to offer a new kind of capitalism, one where regular folks, enabled by efficient online platforms, can turn their fallow assets into cash machines. According to its fans, Airbnb, along with the car-sharing company Uber, and others, is leading us into a less wasteful, more virtuous future. In it, anyone with excess time or space — or a car and a driver's license — can easily become an entrepreneur with little to no start-up costs. But the reality is that these markets also tend to attract a class of well-heeled professional operators, who outperform the amateurs — just like the rest of the economy.

...“There's a certain amount of liquidity that these large sellers inject into a marketplace that can be very helpful for the marketplace to grow rapidly,”

Clearly we will be hearing much more on the subject and its direct and indirect impacts will be crucial for those industries directly affected. Currently, there are beginners in the U.S. trying to build up an e-commerce

network based on the mesh-up of stores with delivery in systems similar to that of Uber. Watch out, Amazon!

PERSPECTIVES

One of the most powerful examples of how things can change in a relatively short period of time can be found in an IB Times story¹⁶ which shows photos of Normandy as it is now and as it was during the D-Day invasion, which marked the beginning of the final offensive of the Second World War. A comparative view that can be regarded with optimism, if we only take these photos into account, but also with a certain degree of caution, if we imagine the inclusion of photos of the same locations in 1935, for example.

Is the market overpriced?

We often come up against the following question: is the market overpriced? In an environment where decisions are impacted by a series of random variables and the emotional state of investors have a direct influence on share prices, we believe it is overly simple to regard the market as a single investment vehicle. Especially at the end of the year, we see many analyses of “aggregate” indices. In this context, it is worth remembering the joke about the “statistician who drowned in a river that was three feet deep on average...”

We prefer not to look at the market from a top-down macro point of view, but to meticulously study and

¹⁶ <http://www.ibtimes.co.uk/d-day-landing-sites-then-now-normandy-beaches-1944-70-years-later-1450286>

monitor companies on our radar. Itaúsa's results and share price are a good illustration of this.

If we return to the analogy of the forest in our last Report, when opportunities appear to be less visible, it is time for one to stock up on cartridges for the shotgun, i.e. study as much as possible so that one can be fully prepared when an elephant eventually appears. In the last report of Oakmark Capital, Howard Marks pointed out that the energy industry had taken over from media/telecom as the largest issuer of high-yield bonds and the fact that, as this is a highly capital-intensive sector, the consequences of the market being questioned could lead to interesting possibilities.

At the end of the day, one should not be in this game to figure out market trends but to acquire companies with solid business models, run by ethical executives whose incentives are aligned with those of the shareholders and at prices believed to be attractive. As Warren Buffett would say, "I buy on the assumption that they could close the market the next day and not reopen it for ten years."

“10,000,000” - The number of new Amazon Prime subscribers during the holiday season.”

— *FT*

USD 99/year - The price of Amazon Prime subscription in the USA.

GBP 79/year - The price of Amazon Prime subscription in the UK.

USD 511/year - Singapore nominal GDP per capita in 1965.

USD 55,000/year - Singapore nominal GDP per capita in 2013.

USD 11,000/year - Brazil’s nominal GDP per capita (2014 estimate).

USD 1,600/year - India’s nominal GDP per capita (2014 estimate).

For now, only about 8% of all luxury sales are online, but they are growing at a rate of 25- 30% a year”.

— *Bain*

“Currently just 4% of Chinese hold passports, compared with roughly 30% of Americans and 70% of Britons, but numbers are growing by 10m-15m a year”.

— *The Economist*

The following are extracts from FT’s article “Is YouTube the new television? Why the video website is rewriting the rules of broadcasting”

— *by Jonathan Ford*

“The “lost generation” – those in their teens and twenties who neither consume conventional media nor watch much TV. In the UK viewing among so-called millennials has dropped sharply. Since 2010, the amount of television watched by those aged 16-34 has fallen 15 per cent.” -

— *The Economist*

It's no surprise then that online games makers, clothing brands and others seeking to tap into pop culture are keen to exploit the power of these YouTubers on social media. Companies such as Pepsi now advertise more on digital platforms (mainly YouTube and Facebook) than they do on conventional media.

Korean musician PSY's global hit is the most popular video in YouTube's history. It has been viewed more than 2.13 billion times.

Google purchased YouTube for just USD 1.65 billion back in 2006. In comparison, Facebook recently paid USD 22 billion for the instant messaging service WhatsApp.

100 hours of video are uploaded to YouTube every minute – that's about six millennia worth of video a year.

Almost 40 per cent of YouTube views come from mobile devices.

YouTube is ranked as the third most popular website in the world, behind Google and Facebook, by Alexa.com, an internet traffic data provider.

“Viruses and bacteria can live on most surfaces for about 48 hours, but paper money can reportedly transport a live flu virus for up to 17 days. It’s enough to make you switch to credit. [or digital payment...]”

— *Southern Medical Journal*

USD 40 billion = valuation of the last private funding round of Uber, which raised US\$1.2 billion from the operation.

USD 11 billion = Hertz Holdings market cap.

USD 10.7 billion was Hertz Revenues in 2013

USD 346 million was Hertz Net profit in 2013

USD 24.6 billion was Hertz total assets at year end 2013

About USD 4 billion dollars was American Airlines market cap by 2014 year-end About USD 25 billion dollars was American Airlines revenues in 2012

110.000 = total employees in America Airlines Group

As of December 31, 2013, American's and US Airways' combined mainline fleet consisted of the following aircraft:

	Average seating capacity	Operating Aircraft						
		Owned	Capital Leased	Operating Leased	Total	Average Age (years)	In Temporary Storage	Non Operating Aircraft
Airbus A319	125	3	-	105	108	11	-	-
Airbus A320	150	11	-	59	70	15	-	-
Airbus A321	183	72	-	24	96	5	-	-
Airbus A330-200	258	9	-	3	12	3	-	-
Airbus A330-300	291	4	-	5	9	13	-	-
Boeing 737-400	144	-	-	14	14	24	-	-
Boeing 737-800	150	86	-	140	226	6	-	1
Boeing 757-200	181	71	2	44	117	19	3	12
Boeing 767-200 ER	186	1	8	11	20	26	1	3
Boeing 767-300 ER	218	45	-	13	58	20	-	-
Boeing 777-200 ER	247	44	3	-	47	13	-	-
Boeing 777-300 ER	310	5	-	5	10	1	-	-
Embraer ERJ 190	99	20	-	-	20	6	-	-
McDonnell Douglas MD-80	140	104	15	44	163	22	1	19
Total		475	28	467	970	13	5	35

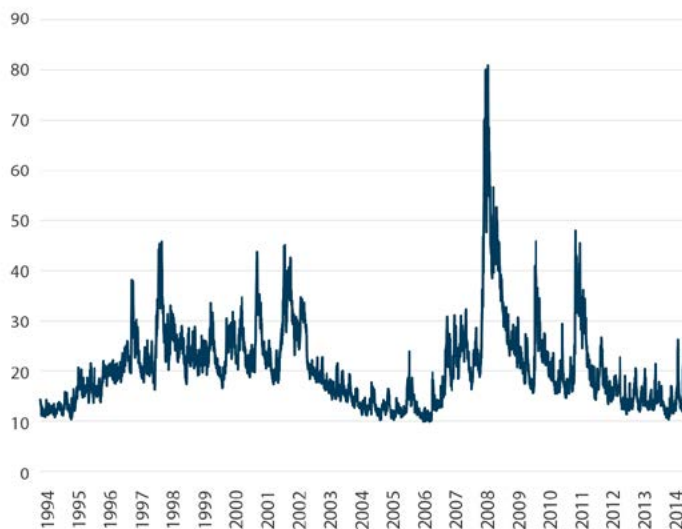
Approximately 33% of S&P500 revenues come from outside the USA.

— **Goldman Sachs**

Buybacks and dividends up. A technology-driven efficiency (and lower capex requirements)?



If you thought 2014 was hard, take a little perspective...



VIX Index = implied volatility of S&P 500 index options.

Source: Bloomberg

30 = the number of years since we started to follow Warren Buffett in which he didn't die.

MISCELLANEOUS

"We understand characters in a story better than we understand ourselves. This is an illusion available only in fiction."

— **Tracy Kidded**

"Creativity loves constraints."

— **Marissa Mayer**

"It is only afterward that a new idea seems reasonable. To begin with, it usually seems unreasonable."

— **Isaac Asimov**

"Art inspired me and changed my way of thinking. My hope is that it will do the same for others."

— **Jochen Zeitz - German Collector about the donation of his African art collection to a new museum in South Africa.**

"Science advances one funeral at a time."

— **Max Planck**

"Nobody is equal to nobody. Every human being is a strange and unique individual."

— **Carlos Drummond de Andrade**

"Statistics are like bikinis: they give you an idea, but they hide the essential content."

— **Roberto Campos**

"I'm not going to keep on repeating my words if I have found a profound and truthful text by a woman who knows how to tell it better than I do."

— **Fernanda Montenegro, reciting Simone Beauvoir**

"I give 2014 a ten. My dreams came true when I was nominated for the PIPA Award."

— **Toz, a graffiti artist indicated for the 2014 PIPA Award, quoted in a column by Ancelmo Gois, where 16 public figures were invited to give 2014 a score of zero to ten.**

"I'd rather interview 50 people and not hire anyone than hire the wrong person."

— **Jeff Bezos**

"Everyone keeps coming at me, wanting me to lecture, to write commissioned booklets, to join this and that, etc — you don't know how I pine to be free of it all and have time to think again."

— **George Orwell after the success of "Animal Farm"**

"Our objective is to make markets work well, not just to stop them working badly, which can be achieved by preventing them from working at all!"

— **John Griffith-Jones - FCA Chairman**

"Gold is money. Everything else is credit."

— **J.P. Morgan in 1912**

PIPA PRIZE

PIPA PRIZE

IP ART AWARD

In addition to the announcement of Alice Miceli as the winner of the PIPA Award by both the Prize Jury²⁴ and the vote of visitors to the finalists' exhibition at the Museum of Modern Art (MAM), the quarter's big news was that two of the three artists chosen to represent Brazil at the 2015 Venice Biennale have been PIPA finalists: Andre Komatsu and Berna Reale, who also won the 2012 PIPA Online Award and was featured on the cover of our report for the second quarter of 2014.

Alice received BRL 100,000 for the Jury Price, plus a three-month artistic residency at Residency Unlimited in New York, and BRL 20,000 for the popular vote.

We are very pleased with the results obtained over the last five years – we have achieved our goal of disclosing and helping develop and internationalize Brazilian artists. In addition, in our opinion, the execution of the program has further improved the initial quality. For this we would once again like to thank Catarina Schedel, the IP Institute's sole executive, and Lucrécia Vinhaes, volunteer and PIPA coordinator, as well as the external members of PIPA's Board, Flávio Pinheiro, Head of the Moreira Salles Institute, and Moacyr dos Anjos.

In March, the Financial Times selected five artists of Brazil's new generation to keep an eye on, all of whom were PIPA finalists (and sometime winners), including

Renata Lucas, the 2010 winner, and Jonathan de Andrade and André Komatsu, both 2011 finalists.

Tatiana Blass, winner of the Jury Prize and the popular vote in 2011, was listed among the world's 50 most collectable artists under the age of 50 by Art + Auction magazine.

Berna Reale, winner of the 2012 PIPA Online Award and a finalist in 2013, was recognized by Simon Watson in the April 2014 issue of Dasartes magazine, as one of the 100 most influential personalities in the world of the arts in Brazil.

The number of our Facebook followers has been increasing every year. At the end of 2013, we had 123,000 followers; now we have more than 200,000.

More than 14,700 votes were cast for the 2014 PIPA Online Award in two weeks (8,294 in the first round and 6,446 in the second). Eight artists exceeded the minimum number of 500 votes and advanced to the second round runoff.

As the artist with the largest number of votes in the second round, Diego de Santos was declared winner of the 2014 PIPA Online Popular Award and received a prize of BRL 5,000.

The winner of the 2014 PIPA Online Award was Paulo Nimer Pjota, elected by a panel²⁵ consisting of the five

²⁴ Comprising Gilberto Chateaubriand, Luiz Camillo Osorio, Agnaldo Farias, Angelo Venosa and Flora Sussekind.

²⁵ Comprising Lucrécia Vinhaes, PIPA board member, Luiz Camillo Osorio, curator of MAM-Rio and PIPA board member, and Augusto Albuquerque, representative of Sacatar.

artists with the most second-round votes. In addition to a two-month residency program at the Sacatar Institute, Pjota received a prize of BRL 10,000.

We recommend visiting the pages of each of the winners on the PIPA site, where you can see their works, find out about their careers and watch video interviews with them.

In 2015, PIPA will continue to present continuity and constant renovation, underlining its position as Brazil's leading contemporary art award.

Keep up to date with Brazilian contemporary art. Follow PIPA on Facebook, YouTube, Google+ and Twitter.

PIPA
PRÊMIO □ PRIZE

Ajude a divulgar o PIPA.
Torne-se um amigo no Facebook:
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www.pipa.org.br

