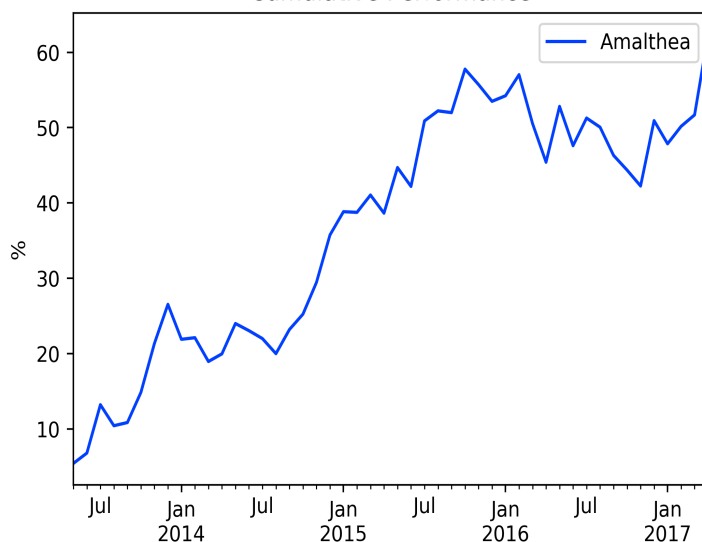


The Bronte Amalthea Fund is a global long/short fund targeting double digit returns over the long term, managed by a performance orientated firm with a process and portfolio that is genuinely different. Objectives include lowering the risk of permanent loss of capital and providing global diversification without the market/drawdown risks typical of long-only funds. A highly diversified short book substantially reduces risk and enables profits to be made in tough markets. The fund is an alternative to equity investing, and complement to most portfolios, and is typically an excellent diversifier which may lower overall portfolio risk.

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	FYTD
FY13											5.4%	1.3%	6.8%
FY14	6.0%	-2.5%	0.4%	3.6%	5.7%	4.3%	-3.7%	0.2%	-2.6%	0.9%	3.4%	-0.8%	15.2%
FY15	-0.9%	-1.6%	2.7%	1.7%	3.4%	4.9%	2.3%	-0.1%	1.7%	-1.7%	4.4%	-1.7%	15.6%
FY16	6.1%	0.9%	-0.2%	3.8%	-1.3%	-1.4%	0.5%	1.8%	-4.1%	-3.4%	5.1%	-3.4%	3.8%
FY17	2.5%	-0.8%	-2.5%	-1.3%	-1.5%	6.1%	-2.0%	1.6%	1.0%	7.0%			10.0%

Cumulative Performance



April proved to be a very good month with both long and short positions contributing to a return more than 3% higher than the MSCI ACWI index, which itself gained 4% (when measured in \$A) across the month.

The portfolio is constructed primarily using a bottom up approach of selecting businesses on their individual merits but in April we also benefited from favourable macro positioning because of our long bias to European holdings. (continued over)

Fund Features		Portfolio Analytics	
Min. initial investment	\$100,000 (for qualifying investors)	Sharpe Ratio ¹	1.0
Min additional investment	\$50,000	Sortino Ratio	1.9
Applications/redemptions	Monthly	Annualised Standard Deviation	10.5%
Distribution	Annual	Largest Monthly Loss	-4.1%
Management fee	1.5%	Largest Drawdown	-9.8%
Performance allocation	20%	% of Positive Months	58.3%
Administrator	Citco Fund services	Cumulative return ²	62.4%
Auditor	Ernst & Young	1 year annualised return	11.7%
Custodian/PB	Interactive Brokers LLC	3 year annualised return	10.6%
		Annual return since inception	12.9%

¹ Sharpe and Sortino ratios assume Australian risk free rate of 2.5%
² Returns are net of all fees

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We are writing a long letter in April for two reasons. Firstly, the last letter (March) was written while John and Andrew were travelling and did not cover all that it should have. Most importantly it omitted to tell you about a major change in our portfolio (which is that we sold our long-held telecom positions).

Secondly, April was a month in which we performed very well without any particular position dominating the results. But the portfolio moved a lot in this month – so we thought we should describe the moves.

The telecom position will be explained after some notes about our April performance.

Our pleasing April

April was a very good month for Bronte. Longs and shorts both added alpha, while macroeconomic effects were more benign. This is in distinct contrast to the past couple of years when the stock picking was quite good offset by being too long in Europe and too long in the Euro currency.

The first half of April stock markets declined slightly. Our shorts (mostly) worked in this fortnight and we were up over a percent when both the S&P and the MSCI were down.

Then followed the first round of the French elections. The nightmare result (a run-off between the hard right and hard left candidates) was avoided – and the markets went up sharply and Europe performed particularly well.

On individual stock picking we had several companies offer attractive results or mid-year statements. But none of these results dominated our performance.

What really pleased us about April was that except for a single day (described below) we made money when the market was falling and when the market was rising. This is of course Nirvana for a hedge fund manager. Long may it last...

Straight Path M&A

We have over 100 shorts in the book and given our ability to find shorts this diversification is currently easily achievable, and a key advantage of Bronte.

Shorts are often chosen by following people we consider less than salubrious. We commonly choose to bet on the jockey not the horse. Whilst a large proportion of these companies suffer significant declines, there are always temporary and unusual exceptions. We have styled our portfolio to neutralize these temporary moves but the structure does a good job of minimizing unusual moves also.

Unusual moves can't be eliminated – and we had our worst single short loss in a couple of years. Don't worry though – it was about 1 percent of the fund.

Straight Path was that exception – a small spectrum holding company with almost no revenue that was bid for by AT&T with an outsized takeover premium.

Straight Path Communications had regulatory problems with the FCC and owned a bunch of experimental spectrum that they had purchased for a very low price in a bankruptcy (and subsequently sued the people from whom they bought it for alleged fraud, after trying unsuccessfully to sell it). The claim was that this spectrum would be useful for forthcoming 5G telecom technologies.

AT&T agreed to buy the company for about 1.5 billion – a 150 percent premium. We covered after we had reviewed the deal terms and will be closely following the transaction.

However, Straight Path was sized according to our guidelines to guard against just this sort of idiosyncratic risk.

When we were travelling people regularly asked why we did not concentrate our shorts further. After all, if we can find 100 shorts why not concentrate in the best “high conviction” positions.

This month provided an excellent demonstration. Had we been concentrated in Straight Path (a short with multiple red flags) we would have been hurt badly. Instead our diversification reduced risk whilst giving us good returns. And in this month we made money on shorts in a rising market despite our Straight Path loss.

The big portfolio change – Telecoms

By far the biggest change in the portfolio this year is that we have almost entirely exited our long wireless carrier telecom position. This was by our largest position and for a several years Verizon (the biggest US carrier) was our largest individual holding.

We sold our positions because our thesis was broken. To understand how, we should explain the origins of the idea and what we learned. At Bronte we spend a lot of time analyzing our mistakes – so forgive a very long diversion.

The original thesis

The original thesis came from watching Randall Stephenson (the CEO of AT&T) talk at a Milken Conference in 2012. The original recording is [here](#) – but we have archived it [here](#). The relevant portion of the video starts at about minute 18.

Randall Stevenson tells a story of the iPhone’s introduction. The introduction of smart phones ran the company out of capacity in parts of country. [Apple offered the iPhone exclusively through AT&T in the USA.]

In New York the problems were intense. The complaint in New York was that the iPhone was a great phone so long as you accepted you could not use it as a phone.

AT&T solved this by more and more capital expenditures. At the time, capex ran at almost US\$20 billion per annum. AT&T was – other than the government – the single biggest capital spending entity in the US.

Stephenson (speaking in 2012) said that the same problem would recur as usage continued to grow massively. But this time Stephenson argued it is different. He asserted that AT&T would not be able to solve this problem by more capital equipment. Spectrum congestion was inevitable.

He saw this as apocalyptic, but we saw potential pricing power and improving profitability.

We were doing simple arithmetic and getting very large numbers. Most Americans if given a choice between their pay-tv provider and their smart phone would choose the smart phone, but they currently pay more for their pay-TV.

We figured that if there were a shortage of capacity then the phone companies would get a lot of pricing power. Our figuring was that with \$10-15 per month of extra pricing power Verizon would wind up as a very good stock indeed. And we did not see a reason to stop at \$10-15.

This of course led us to do a lot of research into telecommunications technology to see if we could verify Mr Stephenson's claim of inevitable shortage. And as we discovered nothing in this space is ever as simple as Mr Stephenson's blanket claims.

So – at the risk of offending people with deep knowledge of how mobile telephony works – we are going to give you a crude understanding of the issues. We do it by simple analogy.

Imagine us in a very large room (say a big indoor stadium), you with a receiver and me with a transmitter flashing a red light.

I could flash you a signal. Morse code would do.

With Morse code I could flash things to you at a maximum rate of about five characters per second. That is not very fast.

Alternatively I could use a computer to control my flashing light and you could use a computer to read it.

I could then flash signal to you at about the intensity of a CD player. It's quite a lot of information. More than enough for you to run the internet at a reasonable speed.

The first and most important way in which we have got more capacity is by using better and better signal encoding and decoding. In mobile telephony, we refer to the generations of transmission technology as analog, 2G, 3G and 4G (namely LTE). It was our assertion that this trend had reached its natural limit.

Now imagine there are 10,000 people in this room. I could flash a signal to all of them with my red light. And if I equipped all of them with a smart decoder (say a little computer built into your phone) then I could flash the signal encrypted – and they could decrypt it, pick out their bit of the signal and discard all the rest of the signal as white noise.

The problem now is that my red-light is shared between 10 thousand people and whilst it is very fast if used for one person it becomes quite slow when used for 10 thousand.

There are multiple potential solutions.

One solution is to beam my red light to every person individually – say using a laser. This is effectively what is done in a fiber-optic cable. The laser in the cable goes to me, and a different laser goes to you, and they are not mixed because they go down different fiber-optic cables. This offers anyone on the end of a fiber optic cable almost unlimited capacity.

There are possibilities of beaming radio-waves to people too, though for the most part this is laboratory stuff, not stuff already implemented by phone companies. [That said – it is said by some that the reason that AT&T wanted to buy Straight Path is that their spectrum was good for beam forming.]

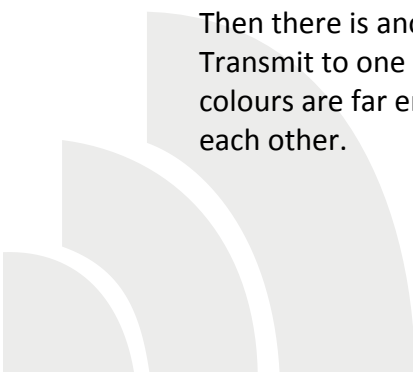
Another more realistic solution for most purposes is cell division. Instead of using one big red light to signal everyone in the stadium, I could instead build hundreds (maybe thousands) of small transmitters each beaming a low intensity beam to small groups of people or even individuals.

There is no real limit to the amount of cell division if I make the power of the antenna low enough. That is, in part, what WiFi does. The power of a WiFi transmitter limits its range to about thirty meters. This means my WiFi transmitter does not interfere with your WiFi transmitter because they are more than say sixty meters apart. The amounts of information that can be carried on WiFi is enormous precisely because the transmitters are so low powered and so numerous.

When someone says that they are going to “run out of spectrum” they are in some sense kidding you. One can always produce more capacity by cell division. The only problem is that it rapidly becomes enormously expensive. To cover America with WiFi one would need to build billions of transmitters.

Cell division is expensive. Really expensive.

Then there is another alternative. A cheap one. Just use another colour to transmit. Transmit to one person using red light and someone else using blue light. If my colours are far enough apart on the spectrum chart then they will not interfere with each other.



Using another colour is another word for using more spectrum.

Spectrum is an alternative to cell division and hence capital expenditure.

Spectrum has value if it allows a carrier to avoid capital expenditure.

This leads us to the three ways phone carriers (like AT&T or Verizon) have managed to carry more wireless data:

- a). Advances in encoding technology (from 3G to 4G, for instance),
- b). More cell division (deploying more equipment) thus shrinking the number of users sharing a single cell,
- c). Deploying more “colours”, also known as more spectrum.

We then spent a lot of time researching the limits to each approach, and we focused on spectrum because Randall Stephenson led us there.

Not all spectrum is equivalent. Some can go through walls (low frequency radio). Some cannot (eg visible light). But going through walls is important if I want to use my mobile phone inside.

It turns out that to a rough approximation light can go through an object half its wavelength thick. (The physicists will pick objections to this statement.) But light at 600 MHz will go through the walls of most buildings but light at 5000 MHz (where upper-band WiFi is located) will not.

This makes 600 MHz spectrum much more useful for mobile telephony. It is sometimes called “beach front spectrum” for this reason.

There is a lot of high frequency spectrum available, but it does not have good propagation characteristics. Sprint – the US carrier - is unlikely to ever run out of such spectrum. There is, however, a limited amount of “beach front spectrum” available which has very good propagation characteristics.

Thus the high frequency players like Sprint or T-Mobile in the US tend to offer cheap unlimited packages (because they have a lot of spectrum) but have lousy coverage.

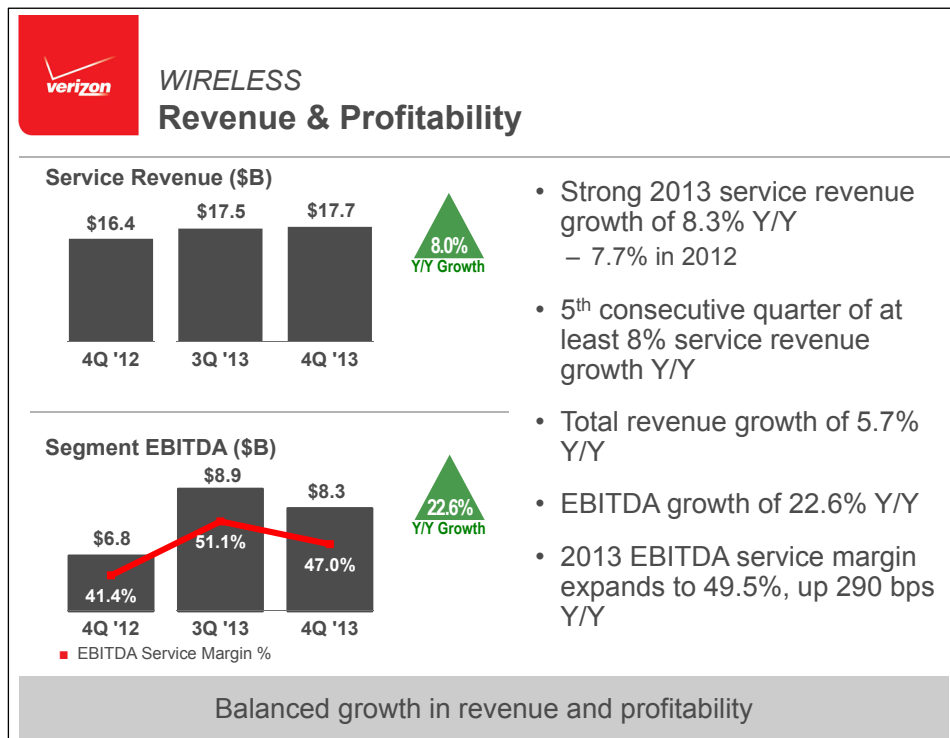
By contrast low frequency players (AT&T and especially Verizon) tend to have limited capacity (as there is limited low frequency spectrum) but great coverage (because it propagates well).

In this sort of market we wanted to own the low-frequency players, as they own what is limited and valuable. But the low-frequency players do not have unlimited pricing power, because customers might jump to high-frequency players offering a cheap – albeit inferior – product.



We purchased positions in shares in low frequency players who we believed would own increasingly valuable spectrum. We figured all we needed to do was wait.

And the data was largely supportive. Verizon Wireless revenue grew quite quickly, even when the fixed line business was declining. Here is a slide of Verizon Wireless revenue from the 2013 Q4 Verizon earnings presentation (slide 7):



Note eight percentage points of Wireless revenue growth – and very fast EBITDA growth.

You could not see this in the Verizon accounts because the landline business was declining, but our logic was that the landline business would stop declining and the wireless growth would continue.

The thesis was reinforced when very high and increasing prices were paid for spectrum in recent auctions in many jurisdictions in the world.

We went so far as to download from the Federal Communications Commission a list of spectrum ownership by county in the US and match that with the population data from the census. We used spectrum prices that we saw being used by major parties in big auctions. Prices are usually considered in dollars per MHz per head of population. We concluded that Verizon offered the best valuation and that using this model owned \$500 billion worth of spectrum. If the spectrum prices that we observed being paid were rational then Verizon in particular was really cheap.

The Verizon position had an additional advantage: the penalty for being wrong appeared low. After all, if we were wrong, then we owned Verizon, a high-dividend paying “grandma” stock.

AT&T's behavior

One fly in the ointment of our thesis was the continued bizarre behavior of the major carriers – especially AT&T. If the spectrum story was as good as we thought, then if you ran a telephone company you would not dilute your stock under any circumstances. You would largely use spare cash to buy back your stock and would bide your time until the loot flowed in from rising prices.

If you believed Randall Stephenson's story that is what you would do.

Instead AT&T purchased DirecTV – a large satellite TV company.

At one stage we had a large AT&T position. Their behavior convinced us to sell. Besides Verizon was better on the spectrum valuation model described above.

Still this irked us. Perhaps we were wrong...

The thesis broke

There were several things that, should we observe them, would tell us we were wrong. These were:

- a) The price of spectrum at major auctions or major transactions not continuing to rise;
- b) Verizon, in particular, or low frequency carriers in general offering increasingly large bundles at lower prices; and
- c) Wireless revenue growth slowing.

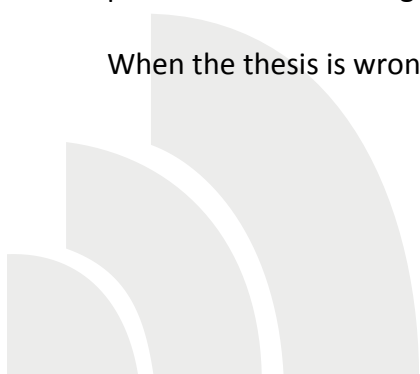
We were unconcerned about price competition for small data bundles (say 2GB of data per month) because we figured there was enough capacity to offer everyone a few GB of data. But we were very concerned if discounts were offered on large bundles of 10GB or more. Most importantly we did not want to see the reintroduction of unlimited bundles.

Alas our thesis broke pretty rapidly on all three criteria over the past six months. The incentive auction (that is the recent US spectrum auction) produced much lower spectrum prices, Verizon reintroduced unlimited bundles, and revenue growth slowed--and then slowed some more (it is still positive, but only just).

The entire position was sold.

Obviously the engineers at Verizon think they can handle all the extra usage that will be piled on what we thought was their limited bandwidth.

When the thesis is wrong it is time to sell.



How bad could it get

We actually think it could get quite bad at the carriers. The world's worst business is one with high fixed costs, low marginal costs, and lots of competition. In that case the competitive forces will drive prices down to the low marginal costs – and it will be impossible to recover fixed costs.

When the fixed costs are debt financed, bankruptcy often follows. That is precisely why the airlines have been bankrupt many times. The marginal cost of filling the otherwise empty seat is very low – and competition at times drives prices to those very low marginal costs.

If wireless telephony capacity really is unlimited and the carriers insist on price wars then the future is bleak indeed. (For shareholders, if not for consumers.)

We have gone from thinking the carriers were exceptionally good longs to believing they might be good shorts. We are not there yet: we would like to see falling wireless revenue first. But if spectrum isn't truly scarce this could get ugly.

Thank you for your continued support. While our results will vary—sadly, not every month will be pleasant as April—our efforts do not.

Thanks again

The Bronte Team

