

# 'Chance played a big role in the success of Manchester United'

**Paul Ormerod** is the author of the bestselling *The Death of Economics, Butterfly Economics and Why Most Things Fail*. Most recently, he has written *Positive Linking – How Networks Can Revolutionise the World*. "We are increasingly aware of the choices, decisions, behaviours and opinions of other people. Network effects – the fact that a person can and often does decide to change his or her behaviour simply on the basis of copying what others do – pervade the modern world," writes Ormerod. In this interview, he speaks to **Vivek Kaul** on why a small number of people can exercise a decisive influence on an eventual social or economic outcome, why copying others is a rational way to work in this world, and why the football club Manchester United may have simply been lucky to get where they have.

**What is positive linking?**

It is basically the principle that 'to him that hath, more shall be given'. The fact, for example, that a particular brand of smartphone has been selected by one of your friends makes it more likely that you yourself will make the same choice. It doesn't mean that you will definitely make the same choice, but the more of your friends who have chosen the same phone, the more likely it is that you will. You suggest that a relatively small number of people can exercise a decisive influence on an eventual social or economic outcome. Could you explain that through examples?

This is one way in which positive linking can work. It is by no means always the case that this is the process by which people are influenced. Often, the way in which behaviour spreads is through 'friends of friends' networks, in which no single person has a strong influence. Ideological or religious movements are ones in which a small number of people often exercise decisive influence. Think, for example, of Hitler in Germany, or Osama bin Laden in our own times. But these 'influentials' can be found in other situations. For example, Gene Stanley and colleagues at Boston University found that the distribution of the number of sexual partners across a sample of individuals essentially had this structure. Most people had relatively few, and a small number had very many indeed. This latter group exercises a decisive influence on the spread of sexual diseases.

**You write "we have inherently less control over situations in which network effects are important than we would like". What is a network effect?**

A network effect is a very important example of positive linking. Network effects, the fact that a person can and often does decide to change his or her preferences simply on the basis of what others do, pervade the modern world. This concept is just as crucial for companies and markets as it is for people. In September 2008, Lehman Brothers went bankrupt, precipitating a crisis which almost led to a total collapse of the world economy and a repeat of the Great Depression of the 1930s. It was precisely because Lehman was connected via a network to other banks that made the situation so serious. Lehman's failure could easily have led to a cascade of bankruptcies across the world financial network, first in those institutions to which Lehman owed money, then spreading wider and wider from these across the entire network.

**Why does network effect lead to less control?**

A key point about network effects is that there is inherent uncertainty about how far any given effect will spread. We have some guidelines about what determines this. So, for example, if a person adopts a new product, and the people in his or her social circle are easily persuadable, it is likely that some of them will adopt it as well. But if it is hard to get them to try new things, they will not. In the former case, there is a chance that the product will get taken up on a large scale, in the latter it will not. But in any practical situation we simply cannot gather the incredibly detailed information which would be required in order to know for certain

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what the impact will be. We need to know the exact structure of the relevant network, who influences whom. And we need to know the degree of persuadability of everyone in the network. We can get approximations to these, but we cannot know them for certain.

**What is preferential attachment?**

Preferential attachment describes a particular way in which a person might copy the choices which others have made. Given a range of alternatives, he or she will choose between them with a probability equal to the proportion of times each alternative has been selected by others. So you are more likely to select the most popular choice, simply because it is the most popular.

**Could you elaborate on that?**

The basic idea is straightforward. Suppose there are just three choices available to you, whatever these may be, and you are wondering which one to select yourself. One has been already chosen 6,000 times, one 3,000 and the final one just 1,000 times, making a total of 10,000 altogether. If we assume for purposes of illustration that the only rule of behaviour you are using when making your choice is that of preferential attachment, the rule says the following. You may actually choose any one of the three alternatives. But you are twice as likely to select the most popular rather than the second most popular, and six times as likely to choose this as the least popular. You are paying no attention to the attributes, to the features of the three alternatives.

**Any examples of this phenomenon?**

The top three sites which are followed up on a Google search typically reflect exactly this pattern. The three of them get almost 100% of the subsequent hits after the search, and the top one of them all gets 60% of the total.

**You say copying is the best policy in this day and age. Why is that?**

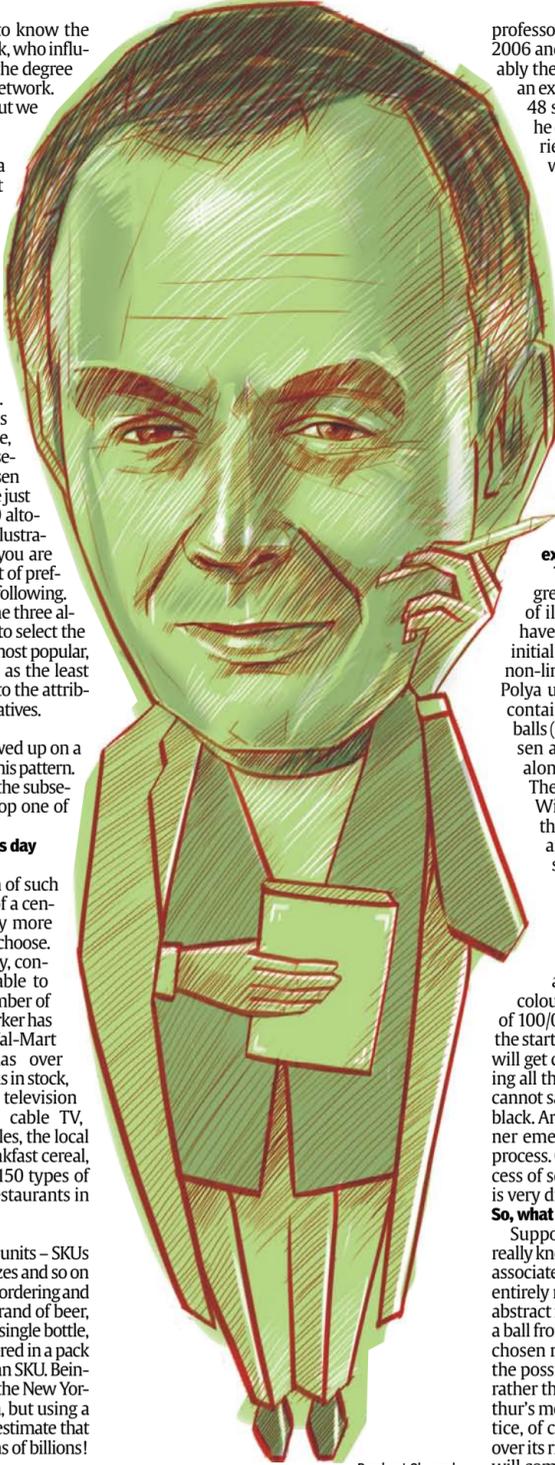
We are faced with a vast explosion of such information compared to the world of a century ago. We also have stupendously more products available to us from which to choose. Eric Beinhocker, formerly at McKinsey, considers the number of choices available to someone in New York alone: 'The number of economic choices the average New Yorker has is staggering. The Wal-Mart near JFK Airport has over 100,000 different items in stock, there are over 200 television channels offered on cable TV, Barnes & Noble lists over 8 million titles, the local supermarket has 275 varieties of breakfast cereal, the typical department store offers 150 types of lipstick, and there are over 50,000 restaurants in New York City alone.'

**That's quite a lot...**

He goes on to discuss stock-keeping units – SKUs – which are the level of brands, pack sizes and so on which retail firms themselves use in re-ordering and stocking their stores. So a particular brand of beer, say, might be available in a single tin, a single bottle, both in various sizes, or it might be offered in a pack of six or twelve. Each of these offers is an SKU. Beinhocker states, 'The number of SKUs in the New Yorker's economy is not precisely known, but using a variety of data sources, I very roughly estimate that it is on the order of tens of billions. Tens of billions! So, what does it tell us?'

The customer has tens of billions of options to choose from. Compared to the world of 1900s, the early twenty-first century has seen a quantum leap in the number of choices available. And rather obviously the time taken to evaluate and choose rises with the number of choices. Many of the products available in the twenty-first century are highly sophisticated and are hard to evaluate even when information on their qualities is provided.

**Q&A**  
**Paul Ormerod**



—Prashant Chaugule

Take the case of mobile tariffs that are available in the market. How many people can honestly say that they have any more than a rough idea of the maze of alternative tariffs which are available on these phones? The range and complexity of choice are so vast that the only way in which people can cope is by adopting behavioural rules which spectacularly reduce the scope of choices available to them. This is the key reason that 'copying' has become the rational way to behave, the rational way to make choices in the twenty-first century. The word 'copying' is, I should stress being used as a shorthand description of the mode of behaviour in which your choice is influenced, altered, directly by the behaviour of others.

**How much difference can the copying motive make to the outcome?**

It can make a huge difference. Duncan Watts, a

professor at Columbia, ran some experiments in 2006 and published the results in *Science*, probably the world's top scientific journal. He set up an experiment where a student could listen to 48 songs, and download for free any which he or she wanted. A number of students carried out this experiment. The end result was that the most downloaded songs were about three times more popular than the least. The experiment was repeated, with just one difference. The student was told the number of previous downloads which each song had. The impact was huge. This time, the most popular songs were over 30 times more downloaded than the least popular. A few songs got lots of downloads, most got very few. In addition, the connection between quality and success was very weak. As Watts noted, 'The best songs rarely did poorly, and the worst rarely did well, but any other result was possible.'

**You talk about economist Brian Arthur's urn experiment. Could you tell our readers about it? What is the practical significance of this experiment?**

This seemingly abstract piece of work has great practical significance. It is another way of illustrating why the Watts' experiments have the outcomes which they do. Arthur's initial work was on a highly abstract concept in non-linear probability theory, something called Polya urns. Imagine we have a very large urn containing an equal number of red and black balls (The colours are immaterial). A ball is chosen at random, and is replaced into the urn along with another ball of the same colour. The same process is repeatedly endlessly. Within this enormous urn, can we say anything about the eventual proportions of red and black balls which will emerge? They start off with a 50/50 split. Can we say how this split will evolve?

**Can we?**

Indeed we can. Arthur and his colleagues showed that as the process of choice and replacement unfolds, eventually the proportion of the two different colours will always – always – approach a split of 100/0. It will never quite get there, because at the start there are balls of each colour, but the urn will get closer and closer to containing balls having all the same colour. The trouble is, we simply cannot say in advance whether this will be red or black. Arthur's equations also show that the winner emerges at a very early stage of the whole process. Once one of the balls, by the random process of selection and replacement, gets ahead, it is very difficult to reverse.

**So, what is the practical implication of this?**

Suppose a new technology emerges. No one really knows how to evaluate the various products associated with it. The principle of copying seems entirely rational. Someone makes a choice. In the abstract model, this is the extraction at random of a ball from the urn. The fact that brand A has been chosen rather than brand B tilts ever so slightly the possibility that the next choice will also be A rather than B – this is the replacement rule in Arthur's model. And so the process unfolds. In practice, of course, as one of the brands gains a lead over its rival, factors other than consumer copying will come into play and reinforce its dominance. There will be positive feedback, positive linking, so that success breeds further success. The more successful brand may be able to advertise more, for instance. Retailers will give more shelf space to it, and may even, in the splendid language of retailers, delist its rival, so that it becomes harder and harder to obtain. Technologies and offers which piggyback on the brands – think of apps and iPhones here – become increasingly designed to be compatible with the number-one brand.

**You write, "the most popular, the most successful, the biggest, does not stay there forever"...**

Success is self-reinforcing, but it does not last forever. Indeed, even as I write these words, the West's press is full of speculation that Google may be about to go into decline. The most popular video on YouTube today is rarely the most popular tomorrow. The song which is at number one this week does not usually stay very long in this posi-

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tion. Over the entire period from 1952 to 2006, no fewer than 29,056 songs appeared in the Top 100 chart in the UK. Of these, 5,141 were in the chart for just a single week. Almost exactly a half stayed in for less than a month, so four weeks was the typical life span, as it were, of a song in the Top 100. In contrast, fifty-nine remained popular for more than six months. The typical life span at number one was just two weeks.

**Any other example?**

At the other extreme is the ranking of the world's largest cities. Mike Batty, a distinguished spatial geographer at University College London, published an analysis of this in *Nature* in 2005. He begins his work with the largest US cities from 1790 to 2000. Over the 210-year period, 266 cities were at some stage in the top hundred. From 1840, when the number of cities first reached one hundred, only twenty-one remain in the top hundred of 2000. On average, it takes 105 years for 50% of cities to appear or disappear from the top hundred, whilst the average change in rank order for a typical city in each ten-year period is seven ranks.

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**How important is the element of chance and randomness in any successful enterprise or outcome?**

In a world where network effects and positive linking exist, chance and randomness are important. A lucky early break sets up positive feedback. Once you or your product have been selected, it makes you more likely that you will be chosen again in future. It is easy to see now, for example, why Manchester United are so successful. They possess global brand recognition and can attract massive sponsorship. But this was not always the case. Chance played a big role in their very survival, and in their subsequent success.

**How was that?**

Manchester United started life as essentially the works team of the Lancashire and Yorkshire Railway company, based in – and called – Newton Heath, then as now a poor district in the eastern part of the city. Just over 100 years ago, Newton Heath were served with a winding-up order. A consortium of local businessmen paid what in today's money is around £750,000 to rescue the club, and changed its name to Manchester United. Despite some fleeting success, the club languished. In 1931 they were effectively bankrupt again and were rescued even more cheaply than before: for some £400,000 in today's money. Yet in 2011, the value of Manchester United is of the order of £1 billion!

**And chance had a role to play in it?**

Chance elements also played a role in United's subsequent success. Just before the end of the Second World War, the club offered the position of manager to Matt Busby, a man who built not one, not two, but three extremely successful teams during the course of his career. But Busby's appointment itself was to a considerable degree of chance. Thirty miles to the west of Manchester lies its great rival, the city of Liverpool. The antipathy between Manchester United and Liverpool FC, the second most successful English team ever, is intense. No player has been transferred directly between the two since 1964. Yet Busby almost joined Liverpool, who had been courting him for some time. The clincher appears to have been that Busby was friendly with a member of the United board through their membership of the Manchester Catholic Sportsman's Club.

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# 'Tata Motors will spring a product surprise in 4-5 years'

**Karl-Heinz Servos**, project director – joint projects, engineering research centre at Tata Motors, recently completed one year at the Indian automaker. Having worked for brands like Volkswagen, Audi and BMW, Servos is now playing a key role in developing future products for Tata Motors, mainly utility vehicles (UV). Servos spoke to **Yuga Chaudhari** on the company's plans. Excerpts from the interview:

**You have worked on the new Safari Storme. How different is the new model compared to the previous one?**

In the new one, we reduced the body-roll. Even though the Indian roads are not in a very good condition, the ride in this vehicle will be a fantastic compromise between comfort and dynamic. I was working on this car and was trying to make it little softer but not too soft. A lot of refinement has been done in the product. The

moment you open the door, you think you are getting into a passenger car. It's on a platform from Aria with a shorter wheel base, which is probably why it is so dynamic. It is also lighter and has an unbelievable turning circle.

**According to you, what will Storme take on – the XUV500?**

Some people would be comparing it to XUV. But XUV is flashy and for young kids, while Storme is for people who are more settled in life and know what they are doing. It is a real off-roader, while XUV is a different car.

**Does it also have inputs from JLR team?**

It's a Tata-only development. Though I work for Tata Motors, we also discuss and share knowledge with the JLR team. Of course, there is international input, there are international suppliers. There will be more knowledge coming in from the JLR team and they belong to us, so it's logical, we

are one company. **How do you find the qualitative difference between the engineers here and those with Volkswagen and Audi?**

The engineering and understanding is good here. But we still as a country are limited on technology. Engineering needs a little bit of experience. We (industry) are relatively new to the business, compared to German engineering. We need to be a little bit more creative. Design is not a problem, we have done cars like Nano. Then it's about the execution and stamina to do it. But I see great potential here. I used to work in China and I could see something similar. But I see more creativity here. But I hope we can overcome the limitation. **Do you see things changing for Tata Motors, in terms of product design and technology?**

Definitely, we have a huge change with Mr Tata leaving and Mr Mistry coming in at the

top level. And Karl Slym entering the company.

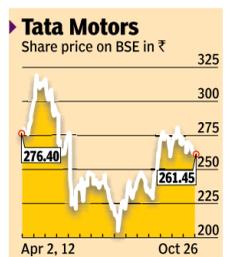
**With the market moving towards UVs and SUVs, will that also be a focus for Tata Motors, going ahead?**

Yes. Tata Motors' strategy is to be there where the market is moving. Probably understand the market before the trend starts. India needs to move towards UVs, because India is made for UVs of all sizes. I would never dream of driving anything else than a UV. These are cars which can deal with rough roads and all sorts of environment.

**What does the product portfolio look like in the next few years in the UV segment for Tata Motors?**

We have Safari and Sumo Gold now, which in that segment are picking up. I think they are better products than Bolero, but still there are some differences in sales.

**Can't you make Sumo more contemporary?**



We need to do something more in that direction. Maybe we can do a little bit more to the platform and make it a little bit what we did with Safari Storme.

**How about getting some completely new products?**

We will surprise the nation in future, in the next 3-5 years. At the moment, we are loading and at one point we will shoot. Car industry is not business of today or tomorrow. In this industry everything takes time, usually 2-3 years. We have a perfect opportunity. Because we are in India, we are much closer to the market, so is Mahindra and so are some others but the multinationals are not. We have the technician in the UV business, the question is how we use that knowledge. c\_yuga@dnaindia.net

# Surface fever rages, Win 8 hype muted

**Bill Rigby** SEATTLE

US shoppers are lining up in moderate numbers to buy Microsoft's ground-breaking tablet computer designed to challenge Apple's iPad.

The global debut of the Windows 8 operating system was greeted with pockets of enthusiasm, but not the mania reserved for some previous Apple launches. Microsoft is positioning the sleek new computing device, which runs a limited version of Windows and Office with a thin, click-on keyboard cover, as a perfect combination of PC and tablet that is good for work as well as entertainment.

"Like the flexibility of having the keyboard and the touch capability," said Mike Gipe, 50, who works in sales for bank Barclays, and was planning to buy a Surface tablet at Microsoft's pop-up store in Times Square in New



York. "It's the combination of having the consumer stuff and the work stuff," he said.

The Times Square store was the first to sell the Surface – Microsoft's first ever own-brand computer – and other Windows 8 devices late on Thursday and will be open through the holiday shopping season. On Friday morning, it was crowded with a mix of tourists and local office workers, but the cash tills were not jammed.

"With the other tablets you're a consumer. With this you can have input," said Peter Townsend, on vacation in New York from Australia with

his wife, who bought a Surface tablet because he liked the keyboard.

Mark Pauluch, 28, who works for a New York private equity firm, said he would like a Surface because he does not want to take a laptop on a plane, but was disappointed when the sales representative told him the wifi-only Surface would not work with Cisco VPN networking.

Wall Street and tech industry experts failed to show great enthusiasm for Windows 8, but were prepared to give Microsoft time to succeed.

"Microsoft did not come out with Windows 8 thinking it will be an overnight success," said Daniel Ives, an analyst at FBR Capital Markets. "But there's hope that this could be the silver bullet of growth (for Microsoft) as well as giving the PC industry some optimism that there's better days ahead." Reuters