Numerous studies by academics and consultants demonstrate that M&A, on average, destroys value. A recent study performed on the Russell 3000 index from 2001 to 2013 shows that most M&A is dilutive to earnings growth over an extended period post-merger. In that same study, small, all-cash deals with a high cash-to-assets ratio performed best compared with all stock mega deals. However, the latter captures most headlines, as well as the imagination of many chief executives and executive teams.

In spite of overwhelming evidence pointing out the challenges associated with M&A, biopharma transaction volumes totalled around $148bn in 2016 (coming off a record 2015 with transaction volume of $228bn, according to HBM Partners). Deal premiums in biopharma average 50 percent and can be as high as 100 percent or more, particularly in heavily sought after areas like immuno-oncology.

Why is M&A so important and popular in biopharma? The answer is quite simply that companies need to replenish their portfolios every few years as key patents run out and acquiring novel assets is the quickest way to offset
these patent cliffs, especially as internal R&D productivity is often unpredictable in large companies. In addition to the innovation argument, realising cost synergies is another popular strategic rationale for large deals. A high price–earnings ratio of an acquirer’s stock (in stock deals) and low financing costs often provide the necessary firepower for large-scale M&A. The fact that big pharma is still hugely profitable (EBITDA margins are often greater than 30 percent) and that many companies sit on large piles of cash reserves does not hurt M&A ambitions either. Another characteristic of the global biopharma industry is its still comparably low market share concentration compared to other, often more mature industries.

**Pfizer and Allergan – the mega deal that did not happen**

Companies like Pfizer have built their strategy largely on mega deals, acquiring Warner-Lambert for $90bn, Pharmacia for $60bn and Wyeth for $68bn between 2000 and 2008. Perhaps unsurprisingly, these mega deals failed to create shareholder value over the same period as the company’s share price moved from $48 at the time of the Warner-Lambert acquisition, to $17 by the time the company acquired Wyeth.

The story behind the last mega deal that almost happened is illustrative of the M&A dynamics in the biopharma industry. Pfizer finally abandoned its attempt to acquire botox maker Allergan in 2016 for $160bn because new tax legislation made it tougher for Pfizer to relocate its headquarters to low tax Ireland (where ‘US company’ Allergan is incorporated). In the end, Pfizer had to pay Allergan a break fee of $150m. The interesting part of the story behind this deal, however, actually happened in 2014 when aggressive M&A player Valeant wanted to acquire Allergan in a hostile takeover attempt. Bill Ackmann’s Pershing Square Capital Management fuelled this attempt and carried out a long-lasting, well-publicised fight. Valeant is mostly known (and despised by most industry peers) for its dubious business model of acquiring companies and products and raising prices with little to no investment into R&D. It was clear from the outset to most observers Allergan did not approve of such a company acquiring it. The fear was that Valeant would only be interested in squeezing out profits and cutting R&D. Consequently another aggressive M&A player from Finland, Actavis, originally a generics company, which had in 2014 acquired US Forest Labs for $20bn, took on the role of a white knight, ultimately acquiring Allergan for $70bn (and confusingly changing its name to Allergan). Allergan’s CEO Brent Saunders is the typical representative of a CEO who does not really believe in the value of investing decades into risky internal R&D, compared to the quick fix growth solution that is M&A (and at the time of the Pfizer acquisition, he was already being praised as the likely new Pfizer CEO). Quickly after the acquisition, Allergan sold off its legacy generics business for $40bn to Teva. This story of Pfizer-Allergan illustrates how popular M&A is as a strategic lever within the biopharma (and generics) industry and how intertwined a series of seemingly disconnected events can be.

**Why mega deals are not the answer**

The main problem with mega deals is that while they typically buy the acquirer a few years of time through cost cutting and realising synergies, they often do very little to fix the underlying issue, namely poor innovation performance. Why is this the case? In biopharma R&D, size
alone is not a virtue above a certain threshold of critical mass, quite the opposite; in fact, it can turn into a considerable problem. Catenion's annual review of R&D productivity and corporate growth performance (sales, EBIT and market cap) of the top 30 biopharma companies has repeatedly shown that the size sweet spot lies between $1bn and $2bn of R&D budget (translating roughly into $5bn - $10bn in revenues). Mid-size companies with a strong biotech heritage, such as Celgene, Regeneron, Biogen and Gilead, dominate the rankings, compared to their much larger traditional big pharma counterparts. In many big pharma companies, bureaucracy, poor decision-making and a lack of accountability bog down internal R&D, all of which is aggravated in a merger situation. It is not only in the biopharma industry that creative functions staffed by scientists and other knowledge workers display dis-economies of scale and are most sensitive to the disruptions that go along with a typical mega deal or merger. Experience tells us that R&D typically loses one to two years after a large merger. Many big pharma R&D organisations, that have been through several rounds of R&D over the last 20 years, often rely on external innovation in the form of licensing deals and collaborations to stay afloat.

The anatomy of a successful deal – Roche and Genentech
In spite of the challenges, there are a few deals that have created tremendous value for the acquirer and its shareholders. The prime example of a successful deal is the step-wise acquisition of Genentech by Roche. Roche's current position as one of the most innovative and productive biopharma companies is, to a large degree, driven by the success of wholly-owned subsidiary Genentech and its portfolio of cancer drugs such as Avastin, Herceptin and Rituxan. Roche initially acquired a majority stake for $400m when biotech was still in its infancy in 1990, and over the course of the next decades stuck with Genentech through several ups and downs before the company really took off in 1997 with the launch of Rituxan and Herceptin. Both eventually became mega-blockbuster drugs. When Roche finally acquired the remaining 44 percent of the company in 2009 for $46.8bn, revenues had grown in excess of $10bn. The initial deal with Genentech was structured in such a way that Genentech was fully independent from Roche, the main link was Roche's right to opt-into development and commercialise Genentech's products outside the US. This independence is probably the main reason why the deal was so successful, as the cultures between Swiss Giant Roche and the freewheeling San Francisco-based biotech would have clashed and probably led to a massive brain drain, undermining the original rationale for the deal. Today it has become common practice to keep smaller, innovation driven companies at arm's length instead of fully integrating them into the mothership. True to this spirit, Roche also decided in 2009 to leave Genentech's core creative research engine intact and fully independent and only integrate those functions that benefit from economies of scale and Roche's much larger global footprint.

Outlook – string of pearls v. mega deals
M&A in biopharma remains an important and challenging strategic lever. Especially when CEO egos or the search of size as a virtue by itself dominate the discussion, underperformance is often the result. The most successful dealmakers...
tend to be those that stay within their area of expertise and acquire smaller companies on a regular basis (the average mid-size biopharma acquires companies for around $1bn per year). Celgene or Shire, for example, are known for their dealmaking skills, both when it comes to acquiring small to mid-size R&D-driven companies and individual assets.

Bristol-Myers Squibb (BMS) also used strategic M&A to turn around a struggling company and R&D organisation. As part of its string-of-pearls M&A strategy, it acquired oncology R&D company Medarex for $2.4bn in 2009. This is arguably the best biopharma deal since Roche acquired the majority of Genentech in 1990. Although BMS paid an 80 percent premium, it is now clear that its shareholders got a complete bargain, because Medarex had two drugs in its portfolio that turned out to become the major growth drivers of BMS. Ipilimumab and nivolumab defined the new category of immuno-oncology checkpoint inhibitors; together they account for at least two thirds of BMS market cap (currently $94bn).

In summary, we can expect M&A to remain high on the agenda of CEOs and investors in search of quick fixes to complex problems. Mega deals will most likely continue to disappoint while those companies that have a compelling strategic rationale for smaller acquisitions (i.e., string of pearls) in areas that they already know well and find good models for integration into a network instead of a rigid corporate structure will be able to create significant value.