

Primer: M&As in pharma

An overview of the drivers of M&A

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Pharma mergers-and-acquisitions propel innovation, realign portfolios and enhance collaboration

Drivers of pharma M&A



M&A as an innovation source

- McKinsey research shows that the share of revenues coming from innovations outside of Big Pharma has nearly doubled from 2001 to 2016.
- Developing new drugs requires high investment, with a low probability of success. Late-stage trials also require the ability to navigate regulatory pathways.



M&A to enhance synergies

- M&As help pharma companies scale up and generate cost synergies that lead to financial and operational gains.
- Companies with high margin spreads have the opportunity to capture synergies by acquiring companies with smaller portfolios.



M&A to realign portfolios

- Companies can use M&As to change the direction of their growth.
- This may be driven by a shift in strategy, a desire to improve commercial success, or a need to get rid of assets from prior deals that no longer benefit their company.

Tax reform in 2017 led to an increase in merger-and-acquisition activity in 2018

2017 tax reform drove M&A activity in 2018

- 2017 tax reform may lead US-based pharmaceutical companies to divest more noncore assets from previous years.
- After-tax proceeds from a divestiture could increase by around 23% due to lower taxes on the seller.
- The first half of 2018 saw 212 deals worth more than \$200 billion, up from 151 deals in the 2017 period.

Changes in drug discovery sources may lead to more M&A activity

- Because of drug discovery, pharmaceutical companies have shifted from conducting mostly in-house R&D to driving innovation through external sourcing.
- In 2018, new drugs created by internal R&D labs at global pharmaceutical companies accounted for only 22% of new drugs, while startup pharmaceutical and biotech companies made up for the remaining 78%.

Biggest M&As announced in 2018

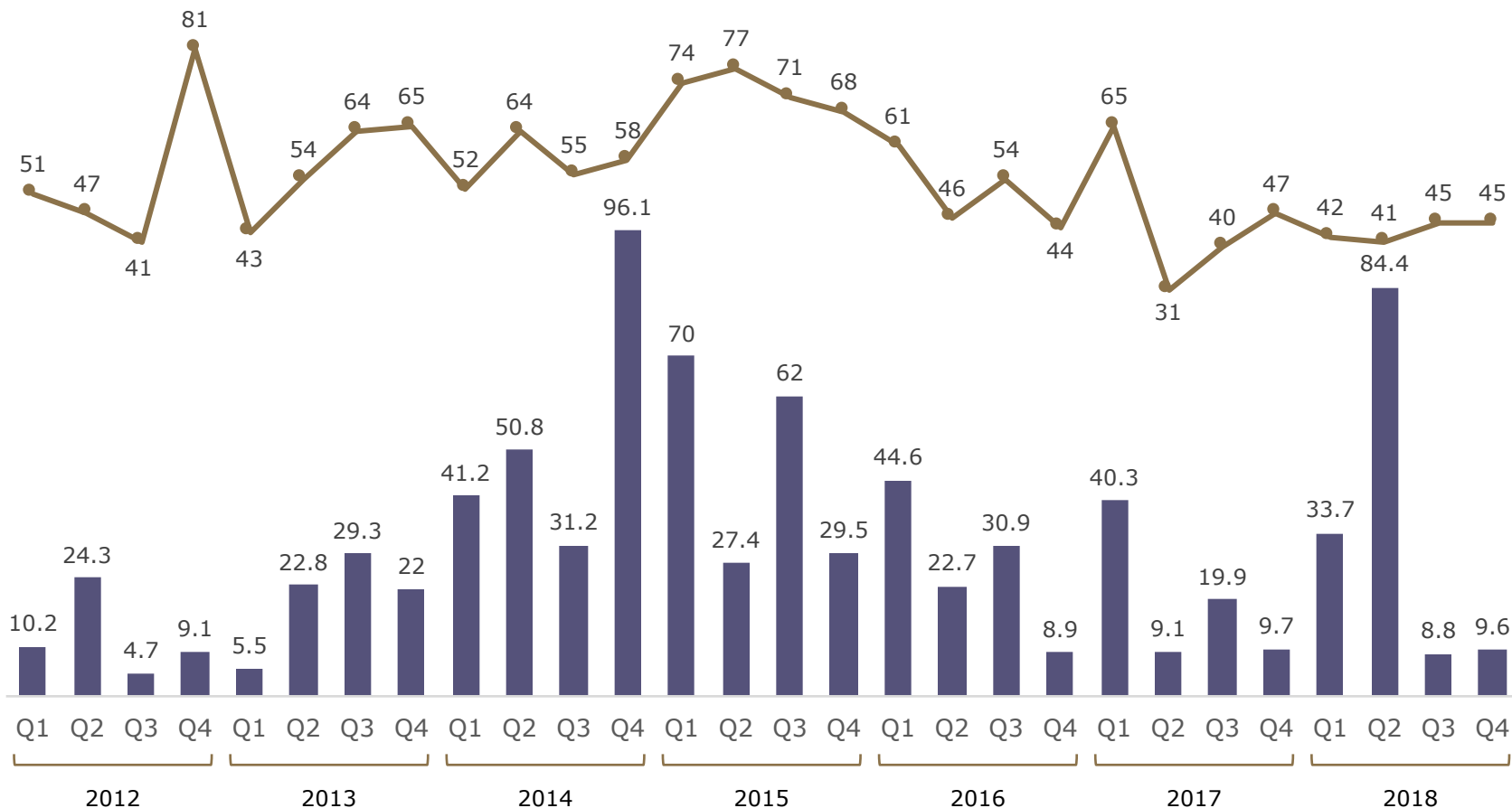
| Acquirer | Target | Value (\$billions) |
|----------|---------------------|--------------------|
| Takeda | Shire | \$64.2 |
| Sanofi | Bioverativ | \$11.6 |
| Celgene | Juno Therapeutics | \$9.0 |
| Novartis | Avexis | \$8.7 |
| Celgene | Impact Biomedicines | \$7.0 |

Sources: Roerich Bansal, et al., "What's behind the pharmaceutical sector's M&A push," McKinsey, October 2018; Amy Brown and Edwin Elmhirst, "As takeover hopes build, 2018 provides a low bar to beat," Vantage, January 9, 2019.

Q2 of 2018 saw over \$84.4 billion in pharma and biotech M&A transactions

Pharma and biotech M&A transactions announced each quarter

■ Total deal value (\$billions) ■ Number of deals



Sources: Amy Brown and Edwin Elmhirst, "As takeover hopes build, 2018 provides a low bar to beat," Vantage. January 9, 2019.

Pre-clinical and phase II-stage drug trials are the most frequently bought out

Number of clinical-stage buyouts by most advanced asset

■ Pre-clinical ■ Phase I ■ Phase II ■ Phase III

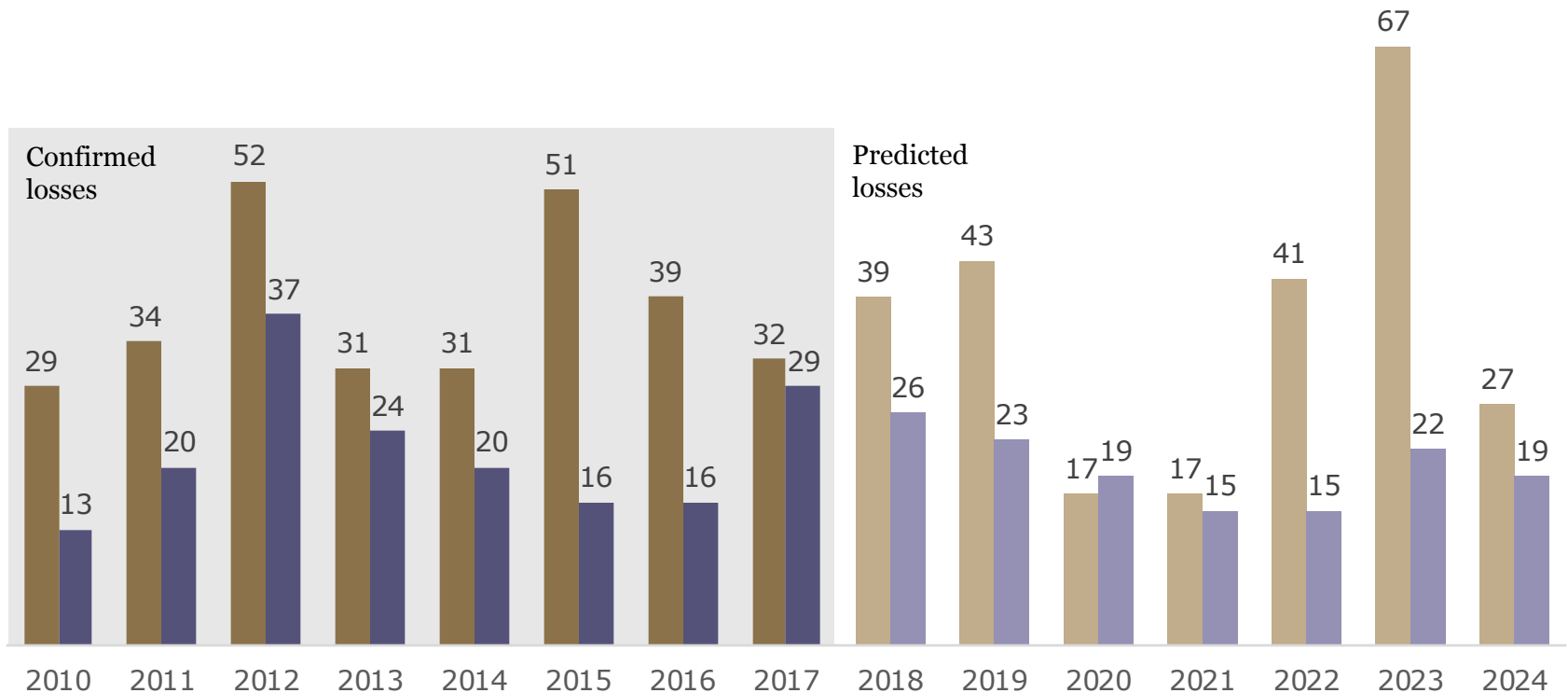


Sources: Amy Brown and Edwin Elmhirst, "Following the M&A money, by phase and therapy area," Vantage, January 29, 2019.

\$251 billion of sales are at risk between 2018 and 2024 due to expiring patents

Worldwide sales at risk from patent expiration

■ Total sales at risk ■ Expected sales lost



Pharmaceutical companies use M&As to acquire new drugs and account for inevitable declines in revenue when patents on brand-name drugs expire and generic competition is introduced into the market.

Sources: "World Preview 2018, Outlook to 2014," EvaluatePharma, June 2018.