An overview of M&A in the Pharmaceutical industry
CPhI pre-connect meeting, Madrid, October 12, 2015

Dr. Christoph Bieri
Managing Partner, Kurmann Partners AG and Chair, IMAP Healthcare Group

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# About Kurmann Partners (1/2)

## Who we are
- Partner-owned **M&A and strategy advisory firm** focused on Pharma and MedTech transactions
- Client-focused project leaders / partners with **executive experience** and supported by lean team of qualified professionals and a large network of senior advisors & experts
- Over 150 transactions closed
- Based in Switzerland with **global reach through IMAP**, the largest global organization of independent M&A firms

## What we offer
We initiate, shape and lead M&A processes, from strategy to closing:
- **Acquisition advisory**: Acquisition strategy, target identification, target approach, leading acquisition process (globally)
- **Sell-side advisory**: Finding the optimal partners, staging auction processes, leading a smooth and value-creating divestment process
- **Strategy work** only in relation to M&A transactions

## What to expect
Every project is run by a partner with sound executive experience
We tailor our services to the individual client’s needs
We create value for our clients through our industry and transaction experience
We employ local know-how of our IMAP partners whenever it adds value
We know how to handle complex, cross-border, multi-cultural transactions
We are independent from banks, audit firms, law firms or any other corporate interests

KP and IMAP have access to all regions relevant to the industry

Our clients: Pharma companies and service providers to Pharma

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<table>
<thead>
<tr>
<th>Company</th>
<th>Company</th>
<th>Company</th>
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<tbody>
<tr>
<td>Grünenthal</td>
<td>Novartis</td>
<td>Reckitt Benckiser</td>
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<tr>
<td>Ipsen</td>
<td>Spirig</td>
<td>Alcon</td>
</tr>
<tr>
<td>Lonza</td>
<td>Ferring Pharmaceuticals</td>
<td>Mepha</td>
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<tr>
<td>Actavis</td>
<td>Hameln Pharma</td>
<td>Grupo Farma</td>
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</tbody>
</table>
## About Kurmann Partners (2/2)

### Pharma Project Leaders

**Dr. Christoph Bieri, Managing Partner**  
M.Sc. Biochemistry, PhD (Biophysics, ETH Lausanne)  
CEO of a VC-backed Biotech firm, The Boston Consulting Group  
Chairman of the IMAP Healthcare practice  
With KP since 2007

**Peter Degen, Managing Partner**  
BA in Business Administration, Advanced Marketing at IMD  
CEO at Doetsch Grether and Sidroga; VP Latin America at Degussa/Asta Medica; Executive at Roche in Latam & Europe;  
With KP since 2010

**Michel Le Bars, Partner**  
MBA HEC Paris; M.Sc. in Petroleum Eng. ENS Pétrole & Moteurs  
Merck & Co.; Head BD EMEA, Strategy in Emerging Markets; Alcan – Lean Master Black Belt; Total, Oil & Gas Operations Management  
With KP since 2013

**Bernard Pellereau, Partner**  
M.Sc. Chemistry, MBA Sorbonne  
20 years at Dow Chemical, President Europe, MEAF and India for Honeywell Specialty Materials  
With KP since 2009

### Our latest landmark deals

<table>
<thead>
<tr>
<th>Deal</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tilletts Pharma (Zeria Group)</td>
<td><a href="#">Image</a></td>
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<tr>
<td>AstraZeneca</td>
<td><a href="#">Image</a></td>
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<tr>
<td>Novartis</td>
<td><a href="#">Image</a></td>
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<tr>
<td>Glencore</td>
<td><a href="#">Image</a></td>
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<tr>
<td>Biogen IDEC</td>
<td><a href="#">Image</a></td>
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<tr>
<td>Spirig Pharma AG</td>
<td><a href="#">Image</a></td>
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<tr>
<td>Sika</td>
<td><a href="#">Image</a></td>
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### Transaction Support and Senior Advisors

In addition to our IMAP Partners around the globe, our transaction support team includes business analysts as well as legal advisor. Furthermore, KP employs the services of several senior advisors, highly qualified professionals with executive background in the following segments and areas:

- **Pharma R&D**
- **Pharma CMO**
- **OTC**
- **Consumer Health**
- **Generics**
- **Biotech**
- **Oncology**
- **Medtech**
- **Dental Industry**
- **High Tech**
- **Energy**
- **Capital Markets**

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Pharma M&A in 2013-2015

4 strategic archetypes for Pharma companies

Impact on Pharma’s manufacturing networks

Drivers for M&A of CMOs

Summary
Pharma M&A is arguably at its all-time high, with unprecedented valuations.

Worldwide M&A Transactions with Pharma and Pharma-related targets, 2010 until Q3/2015

Note: Pharma deals with reported revenue multiple and deal size >USD 10m: n=581; bubble sizes represent deal size. Source: KP research, MergerMarket (retrieved on 06/10/2015)
Some players seem to create substantial shareholder value solely by “serial M&A”

**Allergan / formerly Actavis / formerly Watson**
- Share price increase: >1’200% in <8 yrs
- 39% CAGR

**Valeant**
- Share price increase: >1’700% in <8 yrs
- 45% CAGR

**But: Scale of value creation through serial M&A is difficult to explain**

Source: Thomson Reuters, MergerMarket, Allergan / Valeant corporate presentations, KP research

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Allergan and Valeant vs. Top 10 Big Pharma, development of share price (Jan 2007=100)

Source: Thomson Reuters
Current M&A valuations are an anomaly

“Nobody can come up with computations rationalizing these valuations”
*Investment banker, mid-market*

“Our client always paid significantly more than the maximum which we calculated.”
*Advisor, large Pharma analytics firm*

“This bubble will burst . . . and people will look back and they will say, like with the internet crisis, what happened? Why didn’t we recognise this?”
*S. Schwan, CEO, Roche, to the Financial Times*

US companies deploying overseas cash for M&A

Quantitative easing - cheap money
### Four key drivers for recent transactions

<table>
<thead>
<tr>
<th>Key driver</th>
<th>Examples of transactions (2014/2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline</td>
<td>Celgene / Receptos / Allergan / Kythera / Alexion / Synageva</td>
</tr>
<tr>
<td></td>
<td>Shire / NPS / Roche / Intermune</td>
</tr>
<tr>
<td>Size in a given segment</td>
<td>Hikma / Roxane (generics) / Bayer / Merck (OTC)</td>
</tr>
<tr>
<td></td>
<td>Teva / Allergan (generics) / Omega / Perrigo</td>
</tr>
<tr>
<td>Separation of mixed businesses</td>
<td>Baxalta / Baxter / Reckitt Benckiser / Inverigo</td>
</tr>
<tr>
<td></td>
<td>Abbott / AbbVie (1) / Novartis / GSK (OTC)</td>
</tr>
<tr>
<td>Tax inversions by US companies</td>
<td>Endo / Paladin / Actavis / Warner Chilcott (1)</td>
</tr>
<tr>
<td></td>
<td>Horizon / Vidara / Perrigo / Elan (1)</td>
</tr>
</tbody>
</table>

1) Deal announced in 2013
Source: KP research, MergerMarket
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Summary
Healthcare cost evolution is out of bounds – Pharma is a contributor under the spotlight

Healthcare costs rise consistently...

**Total Health spending, % of GDP**

OECD countries

... with Pharma one of the most visible drivers

**Pharma is one of the most profitable industries**

Net profit margin of top 10 companies by sector, 2014 (%)

- **Banks**
- **Pharmaceuticals**
- **Media**
- **Automobiles**
- **Oil & gas**

1) Source: Worldbank
2) Source: Financial Time

**Constant price increases**

Annual % increase, wholesale drug prices

1) Source: Worldbank
2) Source: Financial Time

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R&D becomes prohibitively expensive for medium-sized players

**R&D costs per new drug: USD 1.4bn (not capitalized)**

**New drug and biologics approvals and R&D spending**

1) Source: Tufts Center, 2014
2) Source: EvaluatePharma, 2015
3) As percentage of Rx Sales

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>2014 Rx Sales [USD bn]</th>
<th>2014 R&amp;D spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Novartis</td>
<td>46.1</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>Pfizer</td>
<td>44.5</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>Roche</td>
<td>40.1</td>
<td>21%</td>
</tr>
<tr>
<td>4</td>
<td>Sanofi</td>
<td>38.2</td>
<td>16%</td>
</tr>
<tr>
<td>5</td>
<td>Merck</td>
<td>36.6</td>
<td>18%</td>
</tr>
<tr>
<td>6</td>
<td>Johnson &amp; Johnson</td>
<td>30.7</td>
<td>20%</td>
</tr>
<tr>
<td>7</td>
<td>GSK</td>
<td>30.3</td>
<td>16%</td>
</tr>
<tr>
<td>8</td>
<td>AstraZeneca</td>
<td>25.7</td>
<td>19%</td>
</tr>
<tr>
<td>9</td>
<td>Gilead</td>
<td>24.5</td>
<td>11%</td>
</tr>
<tr>
<td>10</td>
<td>AbbVie</td>
<td>19.9</td>
<td>16%</td>
</tr>
</tbody>
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Four strategic archetypes will guide reorganization of the Pharma industry

**Absolute size**

**Originators**
Find, develop, launch innovative new treatments. Globally, based on strong R&D organization

**Relative market share**

**Point-of-call specialists**
Provide comprehensive solutions for an indication / TA. Build niche competence

**Providers of low-cost copies**

**Generics**
Manufacture and deliver standard quality at lowest possible costs

**Cost efficiency**

**Biosimilars**

**Medical excellence**

**Consumer marketing**

**OTC**
Market consumer products with medical claim utilizing branding know-how

In-house manufacturing is only strategic differentiator for generics, biosimilars, potentially OTC companies

(1) Note: Biosimilar market will require several years, if not a decade, to mature to the same degree as the generics market
Strategic archetype “Originators”

Mission: find, develop, launch novel treatments

Business model: focused on acquiring innovations through internal R&D, licensing or M&A, and on developing, launching and marketing them

Size: global and big (USD 10bn and more)

M&A: to acquire new products or franchises (pipeline deals), or to gain size (“elephant deals”)

Manufacturing: should not be a core competence (could be outsourced), with the exception of complex biologicals or cell-based therapies
Strategic archetype “Providers of low-cost copies”

**Mission**: manufacture and deliver products with standardized quality at lowest possible price

**Business model**: optimize capacity utilization and industrialize on each level of the value chain

**Size**: big

**M&A**: to gain market access, size, manufacturing competence and manufacturing capacity

**Manufacturing**: is a core competence - backward integration and low cost of manufacturing are direct competitive differentiators

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(1) Note: Biosimilar market will require several years, if not a decade, to mature to the same degree as the generics market
Low-cost providers (generics / biosimilars): absolute size is a key strategic differentiator

### Acquisitions of generic drug manufacturers 1)
#### Deal values >USD 1bn

- **2004**: 2 deals >1bn
- **2005**: 3 deals >1bn
- **2006**: 4 deals >1bn
- **2007**: 4 deals >1bn
- **2008**: 3 deals >1bn
- **2009**: 2 deals >1bn
- **2010**: 1 deal >1bn
- **2011**: 1 deal >1bn
- **2012**: 1 deal >1bn
- **2013**: 1 deal >1bn
- **2014**: 1 deal >1bn
- **2015**: 1 deal >1bn

### Top 10 global generic drug manufacturers, 2014 2)

- **Teva + Actavis**: 21%
- **Sandoz (Novartis)**: 11%
- **Mylan**: 9%
- **Sun**: 6%
- **Hospira (Pfizer)**: 4%
- **Aspen (Pfizer)**: 4%
- **Lupin**: 3%
- **Sanoﬁ**: 3%
- **Sanofi**: 3%
- **Fresenius**: 3%
- **Other**: 36%

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1) Sources: MergerMarket, Evaluate Pharma, KP research

2) Source: Statista, 2015
Strategic archetype “Segment Specialists”

**Mission**: provide comprehensive solutions for an indication / TA. Build niche competence

**Business model**: closely integrate with patient / medical practitioners; set treatment trends

**Size**: depending on the TA / indication

**M&A**: complement portfolio, or get access to a new franchise

**Manufacturing**: should not be core competence—could be outsourced
Strategic archetype “OTC”

**Mission**: market consumer products with medical claim utilizing branding know-how

**Business model**: like FMCG: Incremental innovation, branding, channel optimization; Rx to OTC switch(?)

**Size**: big share in relevant market (segment / country); can be small. Large global players, relatively small local players

**M&A**: opportunistic

**Manufacturing**: costs are paramount - but backward integration is not necessary. Can benefit from outsourcing to gain economies of scale
For OTC brands, relative share in the relevant market is the key success factor.

Market share of top brands in anti-diarrhoeals in key markets in Europe, 2013

IMODIUM / JOHNSON & JOHNSON
ULTRA LEVURA / ZAMBON GROUP
DIORALYTE / SANOFI
FORTASEC / ESTEVE
MUTAFLOR / HERBA
ELECTROLADE / ACTAVIS
ULTRA LEVURE / BIOCODEX
ENTEROGERMINA / SANOFI
SUERORAL HIPOSODIC / RECORDATI
PERENTEROL (UCB) / MEDICE
CODEX / ZAMBON GROUP
SMECTA / IPSEN

Only brand with significant market share in more than one country

In the long term, OTC market may globally consolidate like other consumer industries, such as personal care.
Conclusions – what M&A activity do we expect in the future?

Pipeline deals
Separation of business units (e.g. Pfizer, Sanofi?)
Elephant weddings

Originators

Point-of-call specialists

Providers of low-cost copies
Generics
Biosimilars

OTC

Portfolio complementation

“Brand collectors” (e.g. Omega Pharma, Perrigo, Bayer)

Continued consolidation
Sale of sub-critical units
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**Impact on Pharma’s manufacturing networks**

Drivers for M&A of CMOs

Summary
Consolidation and strategic focus drive reorganization of manufacturing networks

### Pharma M&A / consolidation
- Complexity (number of sites)
- Low capacity utilization
- Redundancies

### Focus on core competences
- Manufacturing viewed as non-core (excl. generic companies, complex products)
- Company-cultural limitations hinder cost-cutting
- Relieve balance sheet, increase return on net assets by selling assets

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**Without volume / business: “empty plant”**

*Happening already*

**With business: sell to buyer / operator**

*Increasingly important*
Sale of plants combined with a manufacturing and supply agreement – complexities

Stakeholder management on the vendor’s side is of paramount importance

- Transaction price
- Future manufacturing & supply terms
  - Cost reductions
  - Capital investment – split between seller and buyer
- Public relations
  - Local government (work places)
  - Unions
  - Press
- Supply Certainty
  - Regulatory track record of buyer
  - Financial stability of buyer
  - Availability of second source
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Summary
The CMO market is still highly fragmented

Market facts

- The majority of CMOs are privately owned and very few are owned by private equity or are listed
- CMO market penetration rates are around 40%
- The five largest CMOs command around 26% of total revenue
- Only 6.7% of all CMOs generate revenues above USD 250m
- Almost 50% of all CMOs display revenues below USD 25m

Source: Recipharm, based on the 195 leading CMOs globally
Large players have been strengthening their position through M&A

**Catalent**
- **Revenue**: USD 1.8bn
- **2004 - 2010**: Cardinal / Catalent (USA), 2007
- **2011 - 2015**: Aptuit Inc. (USA), 2011

**Fareva**
- **Revenue**: USD 1.8bn
- **2004 - 2010**: Heumann PCS (GE), 2007
- **2011 - 2015**: Chromavis SPA (IT), 2013

**Patheon**
- **Revenue**: USD 1bn
- **2004 - 2010**: Mova Pharma (PR), 2004
- **2011 - 2015**: Banner Pharma (USA), 2012

**Aenova**
- **Revenue**: USD 1bn
- **2004 - 2010**: Dragenopharm and Swiss Caps, 2008
- **2011 - 2015**: Euro Vital Pharma (GE), 2012

**Siegfried**
- **Revenue**: USD 600m
- **2004 - 2010**: Unknown deal value
- **2011 - 2015**: Alliance Medical (FR), 2012

Source: MergerMarket, 🌟 = Establishment of growth platform

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Merger / Carve-out / JV
Transaction of > USD 100m
Unknown deal value
## Drivers for M&A in the CMO industry

<table>
<thead>
<tr>
<th>Today: opportunities and pressure</th>
<th>Future: Change of Pharma’s service needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunities for CMOs</strong></td>
<td><strong>Past:</strong></td>
</tr>
<tr>
<td>• Still relatively fragmented, with many niches</td>
<td>Integrated Pharma and many small CMOs</td>
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<tr>
<td>• Gain economies of scale focusing on specific technologies</td>
<td></td>
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<tr>
<td>• Opportunities to acquire sites with volumes from Pharma companies</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure on CMOs to grow</strong></td>
<td><strong>Future:</strong></td>
</tr>
<tr>
<td>• Consolidators already active</td>
<td>• Vertical disintegration of Pharma</td>
</tr>
<tr>
<td>• Size match – Big Pharma wants Big CMOs</td>
<td>• Tiered supply chain (like automotive)</td>
</tr>
<tr>
<td>• Regulatory changes increase cost base / minimum size</td>
<td>• Large CMOs, or strong specialist CMOs</td>
</tr>
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Summary
### Summary

| 1 | Since 2014, Pharma has been in an overheated phase of M&A, which is likely to end soon |
| 2 | Cost pressure forces Pharma companies to further focus their businesses, and to consolidate |
| 3 | Four archetypes emerge which will guide the reorganization of the Pharma industry |
| 4 | In-house manufacturing becomes strategically less important |
| 5 | CMOs must specialize and grow to match their clients’ changing needs |

Thank you for your attention!