Private Equity Investment in the Generics and CMO Industry

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Abstract

The current generic drug market has led to an often harsh consolidation of the industry. An increasingly popular option for companies under financial stress is acquisition by a private equity fund. An acquired company is then provided with the needed equity to implement change or growth strategies that allow them to maintain or improve their market position. We will look at the background to this growing trend in the generics and pharma generics CMO industries and analyse its potential using recent case histories. We will also have a look at the future for Private Equity (PE) investment in healthcare.

Zusammenfassung

Die Generika-Industrie und im speziellen die Pharmalohn- und Auftragshersteller für ethische Arzneimittel, Generika, OTC-Produkte und Nahrungsergänzungsmittel durchlaufen momentan einen harten Konsolidierungsprozess. Dies ist bedingt durch Überkapazitäten, den fortgeschrittenen Saturierungsgrad bei Generikaprodukten in westlichen Ländern mit einhergehender Margenerosion sowie den anhaltenden Kosteneinsparungsdruck der Gesundheitssysteme. Seit 2007 ist eine erhöhte Zahl an Transaktionen zu beobachten bei denen Private Equity (PE) Funds, also Finanzinvestoren, als Käufer auftreten. Private Equity ist eine Form der Eigen- bzw. Beteiligungsfinanzierung für Unternehmen. Den akquirierten Unternehmen wird dadurch außerbörsliches Eigenkapitel zur Umsetzung ihrer Wachstumsstrategien zur Verfügung gestellt. Die Hintergründe und die Bedeutungen dieser für die Generika- und Pharmalohnhersteller-Branche neuartigen Entwicklungen werden anhand einiger Transaktionen beleuchtet und analysiert.

1. Introduction

The ongoing saturation of generic drug products in Western countries combined with persistent pressure from the health care systems for cost savings as well as production overcapacity has caused a margin erosion for generic manufacturers and particularly contract manufacturing organizations (CMO). This has led to a flurry of strategic mergers and acquisitions (M&A). These arguably began with the majority acquisition of Léčiva (later Zentiva), the leading Czech pharmaceutical company of Czech-branded generics, by Warburg Pincus in the late 90s [1]. Their successful initial public offering (IPO) inspired a growing number of PE transactions in the life sciences industry as well as pharma and generic CMOs that have accelerated in the last seven years. Very recent examples would include the takeover of Acino Pharma (Aesch, Switzerland) and Haupt Pharma (Pähl, Germany) in October 2013 and of Temmler (Marburg, Germany), the year before. And the bidding battle between the two PE companies Nordic Capital and Welders for patch manufacturer LTS Lohmann (Andernach, Germany). Most recently, dievini Hopp Biotech Holding GmbH & Co KG, owned by former SAP founder Dietmar Hopp, landed a surprising coup when it acquired the remaining shares of LTS. To give some idea of how activity has grown, a total of 21 billion US dollars worth of PE capital was invested in healthcare companies in 2012 [2]. Healthcare transactions including generics and CMO deals accounted for approximately 10 % of all private equity activity [2]. But this activity was also matched by the number of healthcare portfolio company exits, which hit a 10-year high, with the majority going to strategic players and IPOs, like that of Catatent in July 2014 [3].

2. What is Private Equity and Venture Capital?

The generic term `private equity` (PE) defines an asset class of investments by a late stage investor in operating companies. It consists of equity securities (ownership positions in a corporation) and debt that are not listed on a public stock exchange [4]. PE firms usually make

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investments in operating companies for three to seven years before they sell the business [5]. Funds (capital for investment) raised through institutions are provided from a wide range of sources including pension funds, financial institutions, and other institutional investors like companies, businesses, public bodies and wealthy individuals and are currently fuelled by low interest rates as well as tax incentives. The biggest investors in PE include public and private pension funds, as well as endowments and foundations, which accounted for about 64 % of all investment in PE in 2012.

In return for their financial involvement, PE funds expect revenues above the usual percentage. These objectives can only be achieved by aggressive inorganic and organic growth strategies as outlined further below. As of September 2013, PE returned more than 14 % annually over a ten-year period, whereas the S&P 500 Index returned 7.6 % including dividends [6]. Recent calculations estimate the total net profits distributed to investors worldwide by PE funds equalled more than 1.4 trillion US dollars [7].

In contrast to PE as late stage investors, the term `venture capital` (VC) describes transactions where venture firms invest in less mature companies or start-ups. VC is, by its nature, often found in innovative though risky technology sectors like biotechnology, healthcare, medtech and pharmaceuticals. Early stage VC investors have been active in the biotech industry for a long time.

PE firms come in a variety of shapes and sizes in which the ranking is based on the value of the funds under management. According to the sector-focused Healthcare Private Equity Association (HCPEA) member firms have more than 300 billion US dollars of capital under management [2]. Between 1980 and 2013, the number of active PE firms (Fig. 1) grew continuously worldwide. Back in the 90s, growth was triggered by the New Economy. After the turn of the century, the number of active PE firms continued to grow. Major growth occurred between 1999 and 2001 and between 2005 and 2008, coinciding with major cyclic peaks in the stock markets. Even the Lehman Brothers insolvency in November 2008 only dampened but did not stop this growth. On the contrary, during this time period the interest rates constantly declined from 16 % in the late 80s to below 2 % during the Euro Crisis of 2012, as shown for the US 10-year bond yields. There are currently more than 5 000 registered active PE firms worldwide [8]. 3 300 of these are headquartered in the US [9] and according to European Private Equity & Venture Capital Association's (EVCA) research [10, 11] more than 1 800 PE firms are located in Europe. This impressive number of over 5 000 active PE firms increases to over 9 000, when firms that do not raise money, e.g. corporate funds, are included. Altogether they employ an estimated total of 93 500 individuals around the world [9].

The growth in the number of PE firms has plateaued in recent years due to fund raising problems [8]. In 1994, PE firms accounted for less than 5 % of the European M&A market [1]. Ten years later this figure in-

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has been working at the interface of innovation management & IP, business development & licensing, alliances and M&A in the healthcare and life science industries for more than 20 years while acting as an industrial advisor for a private equity fund as well. He also made the experience of managing an investment portfolio of life science start-ups for a venture capitalist. He studied chemistry, biochemistry and microbiology in Erlangen, where he received his PhD in biochemistry working at Wyeth Pharma´s Medical Research Division in New York. He holds an MBA from the OUBS in Milton Keynes, an MSc in Pharmaceutical Medicine from the University Essen-Duisburg, and a certificate in industrial patent rights from Beuth University in Berlin. Before starting his industrial career he did his post doc at the Max Planck Institute for Biochemistry in Martinsried, Munich. From 2011 to 2013 he was Innovation Manager at Acino Pharma AG in Basle and Aesch, and before that he headed the Corporate Innovation & IP Management of Sigvaris in Winterthur. Afterwards, Dr. Ettner joined the Corporate Business Development at Sartorius Stedim Biotech. Since the end of last year, he has been working in Future Technologies Pharma & Biotech at Lonza´s headquarters in Basle.

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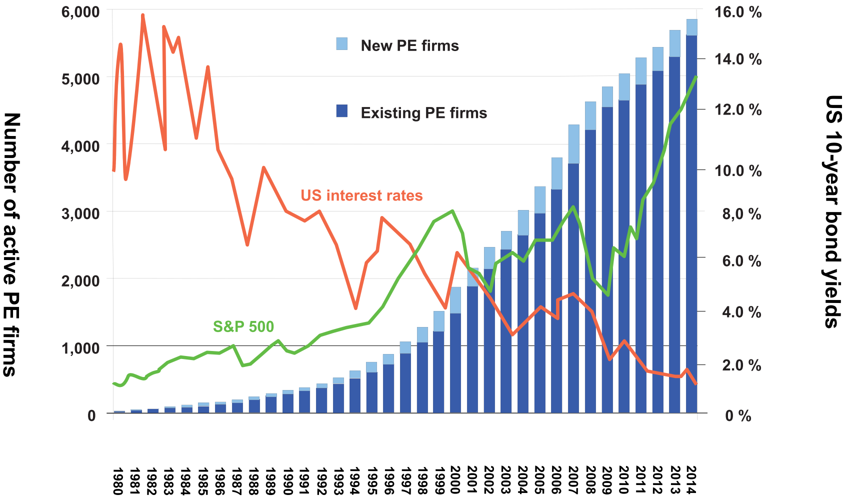
has over 25 years of experience in the pharmaceutical/life science industry working for Beiersdorf AG as well as Fresenius Kabi where he held various executive positions. He has a broad experience in leading and overseeing drug development programs, most of which were initiatives in collaboration with partners in the US, Canada, and Europe. He also has a strong background in dealing with patent/intellectual property matters. From 2001 to 2005, he also served as board member of the Biotech Section of BPI (Federal Association of the Pharmaceutical Industry). In conjunction with a series of educational programs, he transitioned into the Finance Industry back in 2006, where he joined ComInvest Asset Management GmbH (later merged with Allianz Global Investors), working as a financial buy-side analyst for the Healthcare Industry until 2010. From 2011 until recently, Dr. Eichner worked as a principal consultant for Mederi AG while concurrently starting Apus Capital GmbH with other investment professionals. Apus Capital is an investment funds with focus on revaluation cases in various industry segments, primarily IT and Pharma/Biotech. He graduated in Biology at the University of Hannover and did his Doctorate at the Society for Biotechnological Research (GBF) in Braunschweig. He holds an MBA from the Technical University of Giessen/Friedberg and is also a Certified Financial Analyst (CEFA).

■ **Figure 1**



Total number of active PE firms worldwide between 1980 and 2014 by vintage of first fund raised [8] and the respective development of the US 10-year bond yields (red line) and the S&P500 index (green line).

creased to 25 %, returning to between 15 to 20 % today.

Still, the impact of PE investment continues to be remarkable. In Europe, there are more than 20 000 PE owned companies benefiting from about 233 billion euros of investment made by private equity funds since 2007 [12]. In the US, PE firms invested 347 billion US dollars in more than 2 000 US based companies in 2012. There are 11 130 PE backed companies headquartered in the US employing approximately 7.5 million people. Since 2001, the value of PE backed IPOs is well over a trillion US dollars [8].

■ Pros and cons for a PE investor

PE is in the first place, an exit alternative to IPO and strategic merger and/or M&A. PE can also be the method of choice for an owner who is not ready to sell his business yet, but may be ready to sell in the next five years. By merging portfolio companies and acquisition of peer companies, bigger operations can be created that benefit from synergies. Through application of a roll-up strategy (merging of complementary companies), PEs act as a catalyst in consolidating an industry sector. They also set up more focused, structured and, therefore, efficient companies for later IPO or trade sale, generating “transaction liquidity” on the overall M&A carousel. Most PE firms prefer to purchase over 50 % of the equity in a transaction, providing additional debt and equity capital for internal and external growth opportunities. PE professionals not only bring financial strength to a business but also leverage networks to generate new customers and new supplier relationships. If the owners are not willing to sell the business to a competitor and give up control, selling to a PE fund is an alternative. An example is the sale of J&J’s slow growing diagnostics unit to Carlyle at the beginning of 2014 [5].

The PE investment model is built on the premise that companies can improve their performance and better position themselves for long-term success by removing the short-term pressures of public ownership by delisting companies from the stock marked for an overhaul. PE ownership drives a process of rapid change, where new business plans are devised and expertise in management is brought in to execute the plan. New management and leadership usually bring about greater strategic focus on business operations. These aspects allow PE firms to improve the operations, governance, capital structure and strategic position of the companies in which they have invested ensuring that the company is better prepared and positioned to compete for market share in a global economy [6]. PE investments drive broad economic growth through a multiplier effect as the companies in which they invest hire workers, invest in R&D and pursue new innovations and products.

There are however some clear disadvantages as well. The most obvious is the significant level of debt associated with the transaction loaded on the balance sheet of the acquired company, draining earnings. If operations falter, the business runs the risk of default. Another drawback is that owners have to share executive decision-making or even lose management control. Often PE firms demand a majority of the shares. Since equity managers must pay back their investors over a five to seven year period, they must exit their investments in their portfolio companies within a similar time frame through an IPO or trade sale. In general, acquisition targets have to offer the potential for large profits in a relatively short period of time.

3. Outlook for the Generic Pharmaceutical Industry

According to IMS Health, the worldwide generics market is expected to grow to over 400 billion US dollars by 2016. This represents a compounded annual growth rate of more than 10 %, which makes it an attractive target sector for M&A and financial investors. The growth of the market for generic drug manufacturers is fuelled by various factors: first, the expiration of patents (patent cliff) of the pharma ‘large caps’; second, the ageing population in western countries forcing healthcare systems to become more cost conscious and; third, the increasing use of generics in emerging markets. In 2012, generics made up about one quarter of all drug sales. According to IMS Health, they will account for 37 % by the year 2017 [13]. 2012 was the biggest patent cliff the originator pharmaceutical industry has ever seen with a loss of about 48 billion US dollars (2011: 36 billion US dollars) when Lipitor, Plavix, Singulair and Seroquel lost patent protection [14, 15]. According to IMS Health between 2014 and 2018, a value of 121 billion US dollars of small molecule products (Nexium, Celebrex, Symbicort, Abilify, Gleevec, Crestor, Zytiga and Cialis) face patent loss in developed markets [16]. The introduction of innovative generic formulations ("Supergenerics" or "New Therapeutic Entities") as reformulations with a new and more efficient delivery system, more appropriate dosage forms or a novel combination of patent expired compounds with increased compliance and/or other improved product characteristics will also spur growth [17]. The development of innovative generic formulations is expected to become a key differentiating factor in the generic industry [18].

The growth of generics in general has however become more challenging according to a McKinsey report released in 2013 [19]. Generic penetration rates for certain plain generics have already reached 80 % in the US and generiziation levels differ greatly across Europe, ranging from 81 % in Germany to 34 % in Greece [20]. In the past, healthcare reforms fuelled sales of generics, but now many governments, health insurance funds and patients demand more medicines at lower prices looking to reduce their drug expenses through generic drug tenders [21]. Product portfolios are also getting bigger and more complex with an increasing share of difficult to make and specialized drugs including biosimilars. For example, the top generic players TEVA and Sandoz each have up to 1 000 compounds on the market covering a whole range from oral solids, transdermals, sterile injectables, biosimilars, as well as OTC medicines. Alongside new generic market entrants like the originators Abbott and Sanofi-Aventis, companies such as Samsung and Fuji have entered the market intensifying competition. Even though about 200 billion US dollars worth of branded drugs will come off patent in the next five years, generating a potential of 50 billion US dollars in net growth for generics, growth in the global generics market is expected to slow down from growth rates of 10 % to 6–7 % per year [19].

4. M&A and PE Investment in the Pharmaceutical Generics Industry

The past decade has brought significant consolidation in the generics industry with companies actively seeking greater market share through M&A and economies of scale. In 2005 alone, the transaction volume in generics M&A was over 24 billion US dollars with Swiss based Sandoz buying Hexal & Eon Labs for 8.2 billion US dollars and Israeli owned Teva acquiring Ivax for 7.5 billion US dollars. The Teva group spent over 30 billion US dollars on acquisitions between 2000 and 2011 [21]. Figure 2 illustrates the consolidation process in the generics industry as it stood at the end of 2012 [22]. As shown, the top six generics companies at this time were Teva, Novartis-Sandoz, Mylan, Watson, Abbott and Sanofi-Aventis (framed in red). Pharmaceutical companies acquiring generics companies are framed in blue. Arrows in different colours point from the acquiring company to the target company (same arrow colour if one company acquired several targets). Table 1 lists the most recent major M&As. Most striking was the merger between Watson Pharma and Iceland based Actavis in 2012. Just one year later, this newly formed entity named Actavis acquired the US pharmaceutical companies Warner Chilcott from a consortium of PE firms that took the company private in 2005 [23] and Forest Laboratories and Allergan in 2014. With the acquisition of Dublin-based Warner Chilcott Actavis could gain Irish residency and a considerable tax advantage [24]. Also in 2014, the US generics company Mylan acquired the branded generic business from Abbott. The biggest transactions were concentrated in the US and Europe with emerging countries not far behind. The merger of India's Sun Pharma and Ranbaxy in April 2014 created the biggest pharmaceutical company in India with 4.2 billion US dollars in joint sales and the fifth largest specialty generics company worldwide [25].

There are various stakeholders in the pharma generics sector looking for M&A. CMOs are the biggest group seeking manufacturing assets, although pharmaceutical companies and PE firms have also become quite active since 2010. PE investment arguably began as early as 1998 when Warburg Pincus bought into Leciva for 125 million US dollars (Table 2). This was at a time when investment in Eastern Europe was regarded as too risky by most investors [1]. Some years later a majority stake of 69.3 % in Slovakofarma was acquired and both combined operations were renamed Zentiva. After achieving sales of 369 million US dollars in 2003, Zentiva went public on the Prague stock exchange in June 2004 [1]. Warburg Pincus' investment was worth more than 950 million US dollars, a nearly eight-fold increase over the firm's original investment. Another early example was the acquisition of Betapharm in March 2004 (Table 2), the fourth biggest generic pharmaceuticals distributor in Germany, by British PE firm 3i for 300 million euros in a Buy-In-Management-Buy-Out (BIMBO) transaction. Just two years later, 3i sold Betapharm to the Indian generics company Ranbaxy for 572 million euros achieving an EV/EBITDA[1)] multiple of almost 10 and an EV/Revenues[1)]

[1)] EV = Enterprise Value and the ratio to sales (EV/Revenues) and to earnings before tax, depreciation and amortisation (EV/EBITDA) are financial evaluation tools in M&A.

■ **Figure 2**

The consolidation process in the generics industry at the end of 2012 classified into different geographic regions (modified and updated from [22]).

■ **Table 1**

Major pharma generics and generics generics transactions during the five year period 2010 to 2014 (Source: Table 1 and 2 have been made by the authors).

Year	Acquiring Company	Target Company	Deal Value (USD bn)	Industry Segment
2014	Actavis-Watson	Allergan	66.0	Generics – Pharma
2014	Sun Pharma	Ranbaxy	4.0	Generics – Generics
2014	Mylan	Abbott's generics business	5.3	Generics – Generics
2014	Actavis-Watson	Forst Laboratories	28	Generics – Pharma
2013	Actavis-Watson	Warner Chilcott	8.5	Generics – Pharma
2013	Mylan	Agila	1.6	Generics – Pharma
2012	Watson	Actavis	5.8	Pharma – Generics
2012	Novartis	Fougera	1.5	Pharma – Generics
2012	Amgen	MN Pharma	0.7	Pharma – Generics
2011	Teva	Cephalon	6.8	Generics – Pharma
2010	Teva	Ratiopharm	5.0	Generics – Generics

of 2.8. By comparison, Zentiva's EV/EBITDA multiple at the IPO in 2004 was about 4.5 and the EV/Revenues just 1.25, which is considered moderate. These multiples have been growing since then. When Blackstone acquired the pharma CMO business from Cardinal Health in April 2007 (renamed Catalent) with reported revenues of 1.6 billion US dollars in 2006 for 3.3 billion US dollars, Cardinal Pharma was valued at an EV/EBITDA multiple of 11 and an EV/Revenues multiple of 2.0 (Table 2). The EV/EBITDA multiple is influenced by peaks in the stock markets. In 2000 and 2007 for example, climbing M&A evaluations of non-listed companies created a sellers' market. PE activity is also closely linked to the cost of capital because PE firms leverage their financial investments by assuming debt. With worldwide interest rates declining for more than a decade (Fig. 1), loans to finance PE acquisitions have become cheaper and cheaper driving evaluation multiples up. The largest deal in 2012 was TPG's purchase of Par Pharmaceutical for 1.9 billion US dollars [26], resulting in an EV/Revenues multiple of 1.7 and an EV/EBITDA multiple of 5.7 based on the reported figures of 2012. Recent examples of other PE activities in this area included the takeover of Acino Pharma (Aesch, Switzerland) – for the previous merger with parts of Swiss Mepha see Fig. 2 – and Haupt Pharma in October 2013 and of Temmler (Marburg, Germany), the year before. And the bidding battle in 2014 between Nordic Capital (Norway) and Welders (France) for patch manufacturer LTS Lohmann (Andernach, Germany) came close to being the next big PE pharma CMO deal.

■ Strategies and reasons for PE investment and M&A in the generics industry

There are many reasons why generics or pharma generics CMO companies are acquired by a PE firm:

1. One common investment theme is the roll-up strategy. For example,

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■ Table 2

Private equity firm's majority investments and transactions in generics companies and pharma generics CMOs (Source: [1, 23, 25-32]).

Year of investment	Target	Country	Target Business Description	Acquiror	Country	Deal size/ Structure	Revenues acqu./exit	EV/ Revenues	EV/ EBITDA; EBITDA	Year of exit/ price/buyer
7/2014	LTS Lohmann	D	Patch manufacturer (CMO + own products); 1 500 ee	Dievini Hopp Bio-Tech Holding	D	€1.2bn (residual 67%)	€300m (2013)	4.0x	13x €90m* (2012)	
11/2013	Acino Pharma AG	CH	Generic drugmaker and CMO (transdermal, oral); 750 ee	Nordic Cap. & Alvista Capital	N/ US	€325.1m	€262.4 (2013)	1.25x	10.4x €31.3m* (2013)	under restructuring
10/2013	Haupt Pharma	D	Pharma CMO; hormones, antibiotics, zytostatics; 2 000 ee	BC Partners	UK	€200m partial LBO	€282m (2012)	not disclosed	not disclosed €30m* (2012)	2013: Merger with Aenova
12/2012	Temmler	D	Pharma CMO of ointments, gels and droplets; 1 000 ee	BC Partners	UK	not disclosed €350–450m (e)	~€170m (2011)	not disclosed 2–2.5x (e)	9-10x	2013: Merger with Aenova
12/2012	OctoPlus	NL	Specialty pharma: drug delivery of inject. dosage forms; 104 ee	Dr Reddy's	IN	€27.4m	€7.7m (2011)	3.6x (e)	-3.3m*	
10/2012	Banner Pharmacaps	US	Specialty pharma; gelatin-based formul.; 1 200 ee	JLL Partners	US	$255m	~$180m	~1.4 x	not disclosed	Merger with Patheon
8/2012	Riemser Arzneimittel AG	D	Speciality pharma; 500 ee	AXA Private Equity	F	€300m	~€100m (2011)	3.0x	11x €27.1m* (2010)	
9/2012	Par Pharmaceutical	US	Generic drugmaker and distributor; 1 200 ee	TPG	US	$1.9bn	$1.1bn (2012)	1.7x	5.7x $330.9m* (2012)	
8/2012	Aenova	D	Generic, pharmaceuticals, food supplements; 1 600 ee	BC Partners	UK	~€500m half cash	~€280m (2011)	1.8x	9.3x €53m* (2012)	
4/2011	Capsugel (Pfizer)	US	Manufacturer of wholesale pill casings; ~3 000 ee	KKR	US	$2.38bn 40:60 (equity: debt)	$0.75bn (2010)	3.2x	9.3x $255m* (2011)	
1/ 2011	Next Pharma	UK	CMO, product dev., CT, logistic services (hormones, narcotics, antibiotics); ~1 000 ee	Sun Capital Partners	US	~€250m	€117 m (2011)	not disclosed	not disclosed	
4/2007	Cardinal Pharma (Catalent)	US	Largest CMO; oral, injectable and respiratory drug delivery technology; >10 000 ee	Blackstone	US	$3.3bn for 86.3%	$1.612bn (2006 pro-forma sales)	2.0x	11.0x ~$300m* (2006)	7/2014: IPO ~$2.405bn; exit of 31.3% for $871.3m
4/2007	Dragenopharm	D	CMO for generics industry, food suppl. and additives; ~400 ee	Bridgepoint	UK	majority stake	€68m (2006)	not disclosed	not disclosed	
4/2007	Penn Pharmaceuticals	UK	CDMO for commercial and clinical trials, >200 ee	Lloyds Developm. Capital	UK	£67m; £33m >50%	£17m (2006)	3.9x	not disclosed	7/2014: £127m to Packaging Coord.; ~3.0x
3/2007	Patheon	CA	Pharma dev. services and pharma/biotech CMO; 4 600 ee	JLL Partners	US	$150m (25% of shares)	$582m (2008)	not disclosed	loss $-77m (2007)	11/2013: merger with DSM's DPP; $943m#; $188m*
9/2005	Swiss Caps	CH	EU's No 2 CMO: capsules & tablets for health, nutr. suppl. & pharma; 800 ee	Bridgepoint	UK	not disclosed	€142m (2004)	not disclosed	not disclosed	
3/2004	Lichtwer Pharma	D	Phytopharmaceutical manufacturer; 208 ee	3i	UK	€50m; R	€62m	0.8x	loss	under restructuring
3/2004	betapharm	D	Generic pharmaceuticals distributor; 324 ee	3i	UK	€300m BIMBO	€ 106m	2.8x	10 (e)	2/2006: $572m to Dr. Reddy's
1/2003	Slowakofarma (Zentiva)	SK	Largest Slov. pharma-generic drugmaker; 1 500 ee	Warburg Pincus	US	not disclosed 69.3%	not disclosed	not disclosed	not disclosed	merged with Léčiva to Zentiva
8/2003	Terapia	RO	Romania's largest generic pharmaceuticals manufacturer/distributor	Advent International	US	$49.5m 91% ptp LBO	$33.2m/ $75.0m (2005)	1.50x	4.5	6/2006; $324m; Ranbaxy
2002	Sabex	CA	Development, mfg. & distribution of generic small volume injectables	Round Table Healthcare	US	$70m LBO	$75m	0.93x	not disclosed	8/2004: $565m Sandoz; $90m# exit mult.: 8.2x

■ **Table 2 – Continue**

Year of investment	Target	Country	Target Business Description	Acquiror	Country	Deal size/ Structure	Revenues acqu./exit	EV/ Revenues	EV/ EBITDA; EBITDA	Year of exit/ price/buyer
9/1999	Alcalá Farma	ES	Generic contract manufacturer; 350 ee	Advent International	US	Growth capital 30%	$20m	not disclosed	not disclosed	6/2003: Pliva Chiesi[s] + MBB
1/1998	*Léčiva* (Zentiva)	CZ	Leading Czech generic drug-maker	Warburg Pincus	US	$125m MBO for 66.6%	$151.2m/ $369m in 2003	1.25x	4-4.5 (e)	6/2004; IPO $950m; 7,6x

CT: clinical trials; ee: employees; (e): own estimation; ptp LBO: public-to-private Leveraged Buy-Out; MBO: Management Buy-Out from the Czech government's privatisation authority; R: restructuring; BIMBO: Buy-In-Management-Buy-Outs; [s]) Sale of generics division to Pliva and of branded products division to Chiesi; MBB: Management Buyback of contract manufacturing; [#]) Revenues; *) EBITDA.

Aenova was generated from the merger of Bridgepoint's two portfolio companies Swiss Cap with revenues of 142 million euros in 2004, acquired in September 2005, and German Dragenopharm with revenues of 68 million euros in 2006, acquired in April 2007. Five years later in August 2012, Bridgepoint sold the German pharma company Aenova Group with 1 600 employees to BC Partners for about 500 million euros (Table 2). Based on reported sales of 280 million euros in 2011, Aenova was valued at an EV/Revenues multiple of 1.8 and an EV/EBITDA multiple of 9.3. With plans to continue the buy-and-build strategy, within months at the end of 2012, BC Partners' Aenova acquired another complementary firm Temmler Group in Marburg, Germany. And, in October 2013 Haupt Pharma (Pfähl, Germany) was bought in a 200 million euros Leveraged Buy Out (LBO). Aenova now employs about 4 600 employees with estimated total revenues of over 650 million euros in 2014 forming a company that would not have existed without the involvement of PE investors. Consolidation strategies are popular in both Europe and the US, as investors look to aggregate small players in fragmented markets. A second example of a merger strategy was Canadian Patheon (Table 2). In March 2007, JLL Partners acquired 25 % of Patheon, a CMO, for 150 million US dollars and merged this 255 million US dollars revenues business with US based Banner Pharmacaps, a specialist in gelatine based formulations, in October 2012.

2. A carve-out strategy is when a strategic player divests non-core assets. As an example, in April 2007, Cardinal Health divested its CMO business unit Cardinal Pharma with staff of more than 10 000, generating pro-forma sales of 1 612 billion US dollars in 2006. Blackstone acquired 86.3 % of the pharma CMO business, later named Catalent, for 3.3 billion US dollars. Cardinal Pharma was valued at an EV/EBITDA multiple of 11 and an EV/Revenues multiple of 2.0. Another example is the divestment of Pfizer's wholesale pill casings business with sales of 750 million US dollars in 2010. In April 2011, KKK bought this business known as Capsugel for 2.38 billion US dollars with an EV/Revenues multiple of 3.2 and an EV/EBITDA multiple of 9.3.
3. A turn-around and restructuring strategy involves acquiring a company that is not operating efficiently enough and that needs restructuring or strategic change. For generic drug companies, management of costs and achieving operational excellence are a matter of survival since the unit cost of a generic product is on average 44 % of that of an originator product [19]. By bringing new management expertise into an acquired company, the PE investor can focus implementation of new strategy and adherence to a business plan. An example of a restructuring strategy followed by a PE investor is Lichtwer Pharma (Table 2), a phytopharmaceutical manufacturer that was acquired by 3i in March 2004 for 50 million euros. In 2003, Lichtwer generated sales of 62 million euros, but reported a loss that brought down the EV/Revenues multiple to only 0.8.
A recent example of restructuring is Acino Pharma (Aesch, Switzerland), a manufacturer of transdermal patches and solid dosage forms. After Acino's share price had fallen 62 % between 2009 and June 2013, it was acquired by Nordic Capital and Avista Capital Partners in November 2013 for 325 million euros (Table 2), a premium of 32 % of the share price, and then delisted from the Swiss Stock Exchange. In fiscal year 2013, the company reported sales of 262 million euros, an EBITDA of 31.3 million euros and a loss of 14.5 million euros [27], accounting for an EV/Revenues multiple of 1.25 and an EV/EBITDA multiple of 10.4. At the same time Nordic Capital was competing for patch manufacturer LTS Lohmann (Andernach, Germany). Buying LTS Lohmann would have offered Nordic Capital the opportunity to merge those operations with Acino, which it had bought the year before [28]. Surprisingly, dievini Hopp Biotech Holding took over Novartis' 43 % and BWK's 24 % shares of LTS in July 2014 [29]. Without obtaining the desired

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synergies of the merged transdermal operations, Nordic Capital and Avista Capital Partners made use of their buy-and-build capabilities and their financial resources. They restructured Acino from a Business to Business (B2B) company, developing and manufacturing new generic drug products, to more of a Business to Consumer (B2C) focused business producing and distributing branded generics in emerging countries. This trend had already started in October 2011 with the acquisition of Cephalon's Middle East and African business including Cephalon's and Mepha's branded generics portfolio and the acquisition of Mepha's Latin American and Asian business from Teva as well as Mepha's R&D and production site in Aesch. Acino acquired only parts of Mepha's business from Teva as depicted by the purple coloured half of the box in Fig. 2. The total purchase price was 94 million euros [30].

4. Besides typical M&A activities to gain market share and economies of scale as outlined above, a company may directly acquire a smaller company to gain access to a specific technology. For example, in December 2012, Indian generics company Dr. Reddy's bought the publicly listed Dutch Octoplus (Table 2), a drug delivery company, for 27.4 million euros. In 2011, Octoplus generated sales of 7.7 million euros and a loss of 3.3 million euros, looking for a strategic partner to stabilize its business. With this acquisition Dr. Reddy's got access to innovative injectable dosage forms, like biodegradable octreotide implant formulations.

In summary, when a PE investor is considering an investment in a company it always has a plan in mind about when and how to exit their investment. The two most prominent exit strategies for a portfolio company are either an IPO or a trade sale to a strategist, a player in the industry. The partial IPO of one third of Catalent's shares on the NYSE in July 2014 is a recent example [31]. The market capitalisation of Catalent was valued at IPO at 2 405 billion US dollars with a cash return of 871.3 million US dollars for Blackstone, implying an exit multiple of 1.3 calculated on the 3.3 billion US dollars investment of 86.3 % on April 2007. Another example is Zentiva's IPO on the Prague stock exchange in June 2004. Warburg Pincus' investment was worth more than 950 million US dollars, implying a multiple of almost eight times the firm's original investment in the company [1]. After BC Partner's roll-up and growth strategy is completed, heading towards total revenues in the target range of one billion euros, Aenova could become a future IPO candidate. Trade sale exits of PE firms are more frequent. Sabex, a Canadian developer and distributor of generic small volume injectables, was sold after only two years to Sandoz by Round Table Healthcare in August 2004 for 565 million US dollars with an outrageous exit multiple of 8.2. Terapia, Romania's largest generic pharmaceuticals manufacturer and distributor, acquired in August 2003 by Advent International for 49.5 million US dollars with 91 % of the shares was sold to Indian Ranbaxy for 324 million US dollars three years later. In November 2013, DSM merged its pharma development business with Canadian Patheon that was acquired in March 2007 by JLL Partners and sold to DSM for 195 million US dollars [32]. For the fiscal year 2007, Patheon reported a loss of 77 million US dollars being also an example of a successful restructuring and roll-out.

5. Conclusion and Outlook on Private Equity Healthcare Investments

Since the late 90s, PEs have been investing in generic drug manufacturers and pharma generics CMO companies as an interesting growth alternative in the healthcare sector, creating bigger entities that are well structured and more cost efficient. Their portfolios are a source for IPO candidates and enrich the trade sale market place for strategic industrial investors. They also act as a catalyst in the ongoing consolidation process in the generic drug and CMO industry, generating the "transaction liquidity" on the M&A carousel. With healthcare opportunities abounding in China, India and across the Asia-Pacific region and restrictions on foreign direct investment relaxing to some extent, western funds are building up their presence by opening new offices. Activity in these new regions will continue heating up as it stabilizes in older ones. A dominant theme everywhere is cost containment and all regions are facing the pressure of slowing innovation within the pharma and medtech pipelines [2]. But PE firms worldwide are sitting on a record 1.2 trillion US dollars in cash and many have eyes on big pharma assets. In January 2015, with the ECB decision to start a large programme of quantitative easing in the euro-zone the euro fell against the US dollar to an eleven year low, making mainland European healthcare investments for e.g. US-, UK- and Swiss-based PE funds even more attractive. For the near future, activity can only continue to grow because PE firms are the main beneficiaries of the low interest rates.

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