BOŚ DOM MAKLERSKI

Initial Public Offering

1/2019/IPO (1) January 2, 2019

DataWalk

Market disruptor made in Poland?

Analysts:
Tomasz Rodak, CFA,
Sobiesław Pająk, CFA

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DataWalk

Sector: TMT – IT software & services
Bloomberg code: DAT PW
Free float: 68% (pre-IPO)/77% (post-IPO)
Price (as of close December 28, 2018)**:** PLN 24.90

Market Cap (pre-IPO): US$ 24 m
Av. daily turnover: US$ 0.01 m
12M range: PLN 20.00-34.00

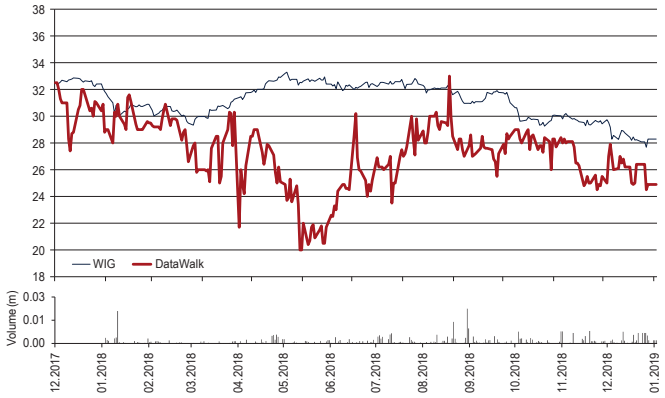
Guide to adjusted profits
No factors necessitating adjustments.

Key data

IFRS, consolidated		2017	2018E	2019E	2020E
Sales	*PLN m*	1.7	1.8	5.6	11.3
EBITDA	*PLN m*	-18.8	-14.4	-13.3	-10.1
EBIT	*PLN m*	-19.0	-14.6	-14.2	-11.1
Net profit	*PLN m*	-19.1	-14.4	-14.2	-11.1
EPS	*PLN*	-5.20	-2.86	-2.81	-2.20
Net debt	*PLN m*	-14.8	-1.6	-47.6	-36.4
No. of shares (eop)*	*m*	3.7	5.0	5.0	5.0

* assuming the maximum number of shares issued
Source: Company, DM BOŚ SA estimates

Stock performance



Source: Bloomberg

IPO time table

1. Book-building	January 23, 2019
2. Subscription (retail)	January 24-31, 2019
3. Subscription (institutional)	January 24-February 1, 2019
4. Share allocation	February 5, 2019

Source: Company

Catalysts

1. Dynamic growth of the link-based analysis segment in the foreseeable future
2. Further reference contracts in the US signed
3. High revenue dynamics expected in the upcoming years
4. Engagement of experts experienced in the development of the Silicon Valley start-ups
5. Huge cost and efficiency advantage of DataWalk platform over rivaling products
6. High gross margins on sales of enterprise IT products

Risk factors

1. Funding risk
2. Difficulties in the recruitment of skilled staff in the US
3. Long sales cycles
4. Long timeline to reach BEP
5. Unequal competitive footing with Palantir and IBM
6. Risk of key staff losses

The WSE rarely sees a case of a domestic-originated company standing a chance to disrupt the status quo of the global market. DataWalk constitutes, in our opinion, possibly such a scarce example of a Poland-grown potential disruptor to a global market of link-based analytics, with its product being disruptive both in terms of price and functionality; by choosing DataWalk platform over competing systems the client may come out many-fold better-off. The Company's proprietary technology has been already successfully productized and sold to early-adopter client base (both domestically and abroad). Now is the time to expand the DataWalk platform across the US market; the current funding round is to provide means for attainment of this goal.

The link analysis segment (DataWalk's target market niche) may be worth globally c. US$ 5 – 10 billion p.a.; key underlying market trends (exponential growth of data stored/ processed by organizations, development of Internet of Things, growing risks related to (and outlays for) security of organizations/ nations, increased counteracting to money-laundering and tax-evasion, drive towards the automation of the large data sets analysis, growing urge to include dark data, dirty data and orphaned data in the data sets subject to analysis, need to make the large-data-sets analytical tools more end-user-friendly) are indicative of its possible vivid growth in the coming years.

There seems to be a gap in the link-based analytics market (occupied predominantly by Palantir and IBM) that DataWalk may successfully explore. Palantir's and DataWalk's target customer segments are non-overlapping (the 'floor' of the former is the 'ceiling' of the latter); product-wise, Palantir is many-fold more expensive (both in terms of money and implementation time), albeit of comparable ability to handle huge data sets. DataWalk beats IBM i2 ANB in terms of the size of the data sets it can handle, platform's agility and cost; the Company intends to compete and gradually displace IBM's solution at the customers from the targeted segments (insurance, law enforcement).

Apart from the mature (and fairly slow-growing) ERP (Enterprise Resource Planning) segment, the WSE lacks exposures to off-the-shelf Enterprise Software segment (not to mention the Big Data area). DataWalk provides such an exposure. Please note that virtually all of top US PE investors have made multiple bets in the Big Data Enterprise Software area. True, the multitude of bets implies their uncertainty as to which of exposures may emerge as a big-ticket winner, but – on the other hand – univocally signals that the Big Data Enterprise Software constitutes a market opportunity that may be sorely regretted if given up on. In other words, this implies that one of the world's (probably) smartest investors class perceives the lack of exposure to the Big Data Enterprise Software segment as more risky than material exposure to it.

The key risk factor for DataWalk is – in our view – the funding risk. Other risks include: skilled staff recruitment in the US, long sales cycles, still protracted timeline to reach BEP, unequal competitive footing and key staff losses.

We value DataWalk in the PLN 192-331 million range (post-money).

Contents

'A disruptive brand goes in and sees a new proposition in the market that can either deliver distinctive value or do something that's already being done, but do it so much better to create disruption in that market and value for the user.'
Justin Basini, Co-founder and CEO of ClearScore

'Being disruptive crucially means setting the agenda other people try to copy. (…) Being disruptive is about changing the game.'
James Kirkham, CEO Copa90

'…being disruptive means looking at an industry and forging a new way that gives you an advantage over the current players.'
Stephen Rapoport, founder of Pact

'There are un-met market needs that incumbents can't address because they've grown so broad in their approach to the market that they're missing those fundamental pockets of need.'
Andy Hobsbawm, co-founder and CMO of Everything

Source: https://www.marketingweek.com/2016/09/28/what-does-it-mean-to-be-a-disruptor

1. Investment opinion

- **DataWalk is a high-tech company at an early stage of development, focused on development and sale of enterprise class commercial off-the-shelf IT products in the link-based analytics area via 'land and expand' marketing strategy; it offers local investors a unique (for the WSE) exposure to the Big Data Enterprise Software segment.**
- **The link analysis segment (DataWalk's target market niche) may be worth globally c. US$ 5–10 billion per annum; some key underlying market trends suggest its possible vivid growth in the foreseeable future.**
- **There seems to be a gap in the link-based analytics market that DataWalk may successfully explore; comparison of the Datawalk platform to competing ones (Palantir's and IBM's) is beneficial for the Company's product.**
- **DataWalk's software is a 'cancer-remedy', not an 'aspirin'.**
- **DataWalk is an example of a potential disruptor to the global market of link-based analytics.**
- **The engagement of successful entrepreneurs with a strong track record in start-ups' development provides credibility to whatsoever complicated and difficult to evaluate concept.**
- **The implementation of DataWalk's platform brought several dozen PLN million savings for Warta – the early adopter of the product.**
- **The Company has recently signed its first contracts in the United States – the key market for the 'take-it-to-the-market' phase.**
- **The key risk factor for DataWalk is the funding risk. Other risks include: skilled staff recruitment in the US, long sales cycles, still protracted timeline to reach BEP, unequal competitive footing and key staff losses.**
- **We value DataWalk in the range of PLN 192 million – PLN 331 million (post-money).**

High-tech company in link-based analysis field

DataWalk is a high-tech company at an early stage of development, focused on development and sale of enterprise class IT products in the link-based analytics area.

DataWalk is a complete, integrated and open platform for the link analytics that is offered as a commercial off-the-shelf (COTS) product and does not require building the final solution from various components. DataWalk system allows for combining diverse data from different and unrelated sources, both internal and external, which are created and stored in different formats. Currently DataWalk aims its offer at the insurance industry (fraud detection) and public sector (law enforcement and intelligence) both on the American and EMEA markets.

The link analysis segment may be worth globally c. US$ 5 – 10 billion p.a.; some key underlying market trends suggest its possible vivid growth in the foreseeable future

The link analysis segment (DataWalk's target market niche) may be worth globally c. US$ 5 – 10 billion per annum. Among the key drivers for the link analysis software we see: (i) exponential growth of data stored/ processed by organizations, (ii) development of Internet of Things, (iii) growing risks related to (and outlays for) broadly defined security of organizations/ nations, (iv) increased counteracting to money-laundering and tax-evasion, (v) drive towards the automation of the large data sets' analysis, (vi) growing urge to include dark data, dirty data and orphaned data in the data sets subject to analysis, and (vii) need to make the large-data-sets' analytical tools more end-user-friendly.

DataWalk's versus Palantir's and IBM's products

Palantir and IMB i2 are the main competitors of DataWalk in the link analysis domain. Palantir's and DataWalk's target customer segments are non-overlapping (the 'floor' of the former is the 'ceiling' of the latter); product-wise, Palantir is many-fold more expensive (both in terms of money and implementation time), albeit of comparable ability to handle huge data sets. DataWalk beats IBM i2 ANB in terms of the size of the data sets it can handle, platform's agility and cost; the Company intends to compete and gradually displace IBM's solution at the customers from the targeted segments (insurance, law enforcement).

DataWalk's software is a 'cancer-remedy', not an 'aspirin'

One application of DataWalk's platform is for law enforcement recipients. The system allows to link various pieces of information in search for specific patterns which would help to prevent certain sorts of crimes (incl. organized crimes like human and drug trafficking). From this point of view the DataWalk software is not an 'aspirin', which temporarily makes you feel better during a cold (or something that you may go without), but it is a 'cancer-remedy'; some organizations or teams of analysts (that DataWalk targets) must use a solution in the link-based analysis category (using a general purpose analytics is not a viable option here). Hence, DataWalk's software (or, for that matter, an analogous application of a different vendor) is an indispensable tool for each modern law enforcement agency.

Unique (for the WSE) exposure to Big Data Enterprise Software segment

Apart from the mature (and fairly slow-growing) ERP (Enterprise Resource Planning) segment, the WSE lacks exposures to off-the-shelf Enterprise Software segment (not to mention the Big Data area). DataWalk provides such an exposure. Please note that virtually all of top US PE investors have made multiple bets not only in the Enerprise Software area, but also in the analytics portion of the Enterprise Software market (eg. Sequoia Capital and Ligtspeed Ventures have several dozen exposures only in the Big Data segment of the Enterprise IT sector). True, the multitude of bets implies their uncertainty as to which of exposures may emerge as a big-ticket winner, but – on the other hand – univocally signals that the Big Data Enterprise Software constitutes a market opportunity that may be sorely regretted if given up on. In other words, this implies that one of the world's (probably) smartest investors class perceives the lack of exposure to the Big Data Enterprise Software segment as more risky than material exposure to it.

Market disruptor made in Poland?

We believe that DataWalk is an example of a potential disruptor to the global market of link-based analytics. The Company offers a new solution in the market of link analysis and delivers distinctive value for the user. Not only has DataWalk proposed a platform that is many-fold cheaper than rivaling platforms on the market, but also DataWalk's system is way more effective. Essentially, according to our estimates, by choosing DataWalk platform over other systems the client may come out 5-10 times better off.

People = the key element

DataWalk's technology was good enough to attract the attention of people with the proven track record in development of start-ups from the Silicon Valley. For potential investors the engagement of successful entrepreneurs with a strong track record in start-ups development provides the credibility to a whatsoever complicated and difficult to evaluate concept. Moreover, experienced and recognizable managers are the Group's ambassadors who facilitate expansion on foreign (especially US) markets.

Huge success at an early-adopter (Warta)

The implementation of the TUiR Warta contract has been probably the Company's greatest success so far, as it proved the DataWalk system's spectacular effectiveness. The contract was in the area of fraud detection in Warta's insurance operations and the client's aim was to improve the fraud detection parameters. The system was fully implemented within 6 months (Mar.-Oct. 2017) and in consequence, the detection rate of frauds has grown by 60%. In our opinion it allowed the client to save several dozen million PLN a year which is a remarkable result, given probably less than PLN 1 million DataWalk's system cost.

Early encroachment into the US turf

The Company has recently signed its first contracts in the United States with Northern Virginia Gang Task Force (NVGTF) (September 2018) and Liberty Mid Atlantic High Intensity Drug Trafficking Area (LMAHID) (October 2018), both in the area of law enforcement and public security. The contracts involve sale and implementation of a perpetual license of the DataWalk analytical platform. The contracts are quite small, however they are crucial to the Company's development – they mark vital milestones of the strategy concentrated around building a portfolio of the first references for the DataWalk product in law enforcement and public security applications in the US.

'Land and Expand' strategy

DataWalk intends to implement the 'Land and Expand' marketing strategy, which focuses on replaying the effects of successful implementations and business projects in a single organization via further sales and also on the new clients acquisition within the same capital group or in some way related with the initial client. By closing a single, smaller deal, the Company works alongside the client as a trusted partner. This makes it easier to expand and capture more opportunities over time. Two contracts within Talanx Group can serve as examples of a successful implementation of the 'Land and Expand' strategy.

Why then DataWalk does not seek funding in the Sillicon Valley if it is 'so great'?

Why then does not DataWalk seek funding in the Sillicon Valley if it is 'so great'? The answer is trivial. With amplitude of potential investment projects, even an innovative project from Poland (and a potential disruptor to a market niche) with its key references at accounts whose names do not 'ring the bell' in the US (and are geographically remote – making it cumbersome to verify the customer's satisfaction level (or lack of thereof) with the product) would find it ultra-difficult to get it to the project assessment stage in the Sillicon Valley. This, however, should change by the end of Stage 3; by then c. 20 high-profile accounts in the US should be won and – consequently – during the next round of funding we would see the US VC/PC investor class as one of target investor groups at the turn of Stage 3 and Stage 4.

A prudent investor will hold to the exit

We view DataWalk as a very promising data analytics company that delivers distinctive value for users, fulfilling a certain niche on the market. We believe that DataWalk is a perfect fit for big and well-established IT software companies, integrators and IT consulting companies like SAP, Oracle, IBM, Hewlett Packard, Accenture, etc., which are growing mainly via acquisitions. We expect a potential buyer to show up at 4th or 5th Stage of the Company's business development (2023-2026), when DataWalk should reach a reference base of c. 100 world class clients, reaching full business stability. This will be the best moment for a prudent investor to exit DataWalk.

The key risk factor for DataWalk is the funding risk

We see the funding as the biggest source of risk. Due to the early development stage and its lack of positive operating profitability DataWalk's opportunities to raise external capital for funding its operations are limited. The lack of access to funding may exert a negative impact on the Company's activities, its development prospects and financial standing or financial results as well.

We value DataWalk in the range of PLN 192 million – PLN 331 million (post-money)

Valuation of the companies at such an early stage of development is challenging due to: (i) insignificant value of financial parameters for executing a peer-relative valuation and (ii) lack of public data for peer companies which are usually non-public entities. We managed to prepare a valuation framework based on three methods, which implies the post-money valuation of DataWalk in the range of PLN 192 million – PLN 331 million.

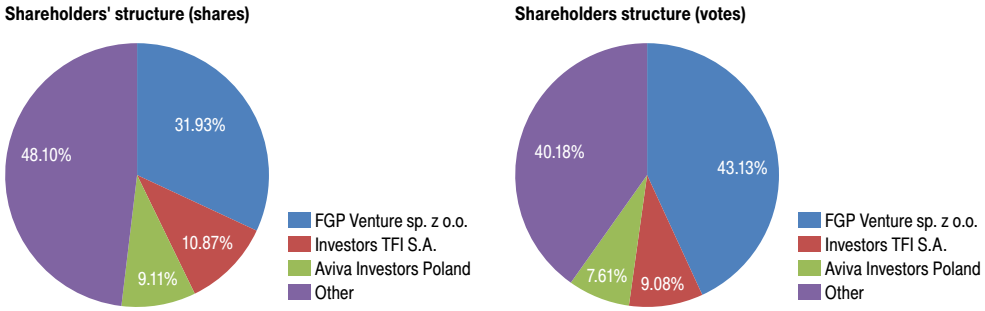
2. Shareholder structure and offer details

- **FGP Venture Sp. z o.o. is currently the biggest shareholder of DataWalk with 31.93%/ 43.13% of shares/ votes at the Company's general meeting; FGP Venture is owned by DataWalk's founders and managers.**
- **The Company wants to issue up to 1,350,000 new M-series shares; after the issuance new shareholders may own up to 26.84%/23.46% shares/votes in the Company.**
- **DataWalk's shares will be listed on the WSE main market after the offering.**
- **The Company aims to raise PLN 60 million to spend on (i) operating activities in the US, (ii) development of an analytic platform, (iii) protection of intellectual property and (iv) operating activities in Poland.**

Shereholders' structure

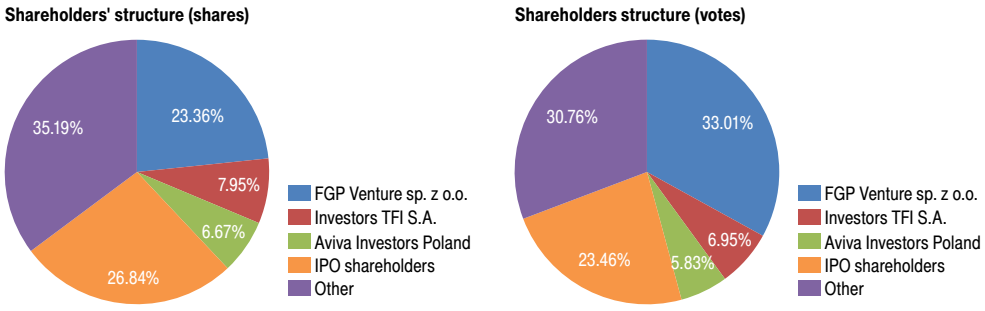
FGP Venture Sp. z o.o. is DataWalk's major shareholder with 31.93% of shares and 43.13% of votes at the Company's general meetings. The entity is owned by DataWalk's founders and managers – Mr. Paweł Wieczyński, Mr. Krystian Piećko and Mr. Sergiusz Borysławski, each with equal holding share. Investors TFI (10.87% shares; 9.08% votes) and Aviva Investors Poland TFI (9.11% shares; 7.61% votes) are the remaining disclosed shareholders. After the new shares' issuance, the holding of FGP Ventures will fall to 23.36% shares and 33.01% votes at the general meeting (assuming that the entity will not buy the new shares in the offer).

Fig. 1 *Shareholders' structure before the offer*



Source: Company, DM BOŚ S.A.

Fig. 2 *Shareholders' structure after the offer*



Source: Company, DM BOŚ S.A.

Estimated proceeds

Assuming (i) the maximum number of shares issued, (ii) issue price at PLN 44.44 per share, and (iii) cost of the IPO at PLN 2.4 million, net proceeds will amount to PLN 57.6 million. Additionally, in 2018-22 the Company aims to obtain c. PLN 5 million from government grants related to innovation in technology.

IPO issue goals

The Company intends to designate funds from the issue to four main objectives:

- **Financing of operating activities in the US**, which is considered as building the sales and implementations teams as well as expanding the marketing team and the current business of DataWalk Inc. (American subsidiary of Datawalk S.A). The Group's expenses within **Objective 1** will encompass particularly the remuneration of sales people, implementation engineers, marketing teams and cost of the day-to-day operations of DataWalk Inc. **The estimated expenses with respect to the first objective will amount to up to PLN 34.24 million.**

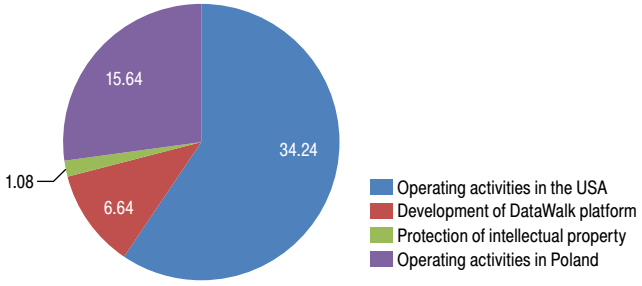
  Until 2022, which marks the end of the third development stage, the Group plans to have 5-8 teams at its disposal, consisting of sales experts and system engineers responsible for the implementation. The DataWalk Inc. management have already been recruiting the first potential candidates for team members.

- **Further development of DataWalk analytic platform.** The Group's expenses within **Objective 2** will encompass particularly the remuneration of programmers and system architects in Poland. **The estimated expenses with respect to the second objective will amount to up to PLN 6.64 million.**

- **Protection of intellectual property.** The proceeds for the **Objective 3** will be spent on pending and future patent proceedings. **The estimated expenses with respect to this objective will amount to up to PLN 1.08 million.**

- **Operating activities financing in Poland.** Operating activities are considered to be costs of the implementation team in Poland, marketing costs in Poland, compliance costs and day-to-day operations of DataWalk S.A. which are the management's and administrative costs. The estimated expenses with respect to **Objective 4** will amount to **up to PLN 15.64 million**.

Fig. 3 *DataWalk; Equity issue objectives (PLN m)*



Source: Company, DM BOŚ S.A.

IPO proceeds will be spent till 2022

DataWalk plans to spend the proceeds acquired for the achievement of the abovementioned objectives until the end of 2022 which marks the planned completion of the third stage of the Group's development strategy. Afterwards, another tranche of financing is scheduled.

3. The Company and the product

- **DataWalk is a high-tech company at an early stage of development, focused on development and sale of enterprise class IT products in the link analytics area.**
- **The Group has already signed two production contracts in the US.**
- **DataWalk Group employs successful American entrepreneurs with huge experience in the Silicon Valley start-ups' development, marketing and funding.**
- **DataWalk system allows for combining diverse data from different and unrelated sources, both internal and external, which are created and stored in different formats.**
- **Currently DataWalk aims its offer at the insurance industry and public sector (law enforcement and intelligence) both on the American and EMEA markets.**

3.1. Company overview

Company at an early stage of development focused on enterprise class IT products

DataWalk (prev. PiLab) is a high-tech company (still at an early stage of development) founded by Krystian Piećko in 2011. At the beginning the Company offered software dedicated to the management, collection and archiving documents and data sets. Despite the previous achievements and observing much larger potential for implementation of the proprietary technology, in 2014 owners decided to change the Company's overall scope of business from a local software house (offering software and implementation services to clients with different needs, from various branches of the economy) into a global vendor of products focused on the development and sale of enterprise class IT products (namely specialized software with definite application), competitive globally and generating recurring sales.

Currently DataWalk has been developing an analytical platform called DataWalk, designated for analyzing big and very big data sets from many different sources and collected in different formats, including incomplete and contaminated data. At the same time DataWalk carries out marketing and selling activities in Europe and manages the Group.

DataWalk Group's employee base amounts to 57 people, including 33 people employed under the b2b contracts. The majority of them (38 people) are technical workers.

Fig. 4 *DataWalk; A brief summary of corporate history*

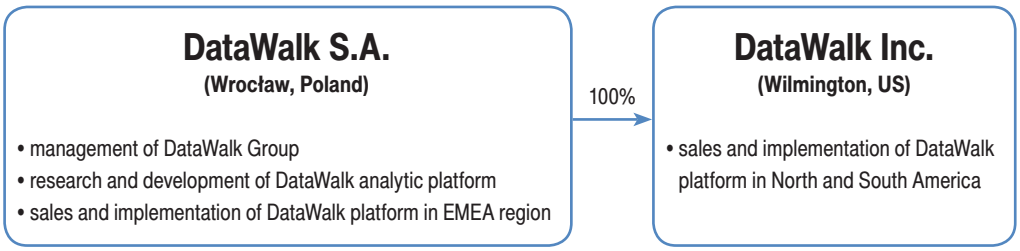
Date	Details
October 2011	DataWalk (prev. PiLab) founded by Krystian Piećko and other investors
May 2012	The Company raised PLN 0.3 million in the C-shares private offer
July 2012	First listing of the Company's shares on the Polish New Connect market
January 2014	Change in overall scope of the business
July 2016	DataWalk Inc. (Wilmington, Delaware) established
2016	Mr. Krystian Piećko, creator of DataWalk platform awarded with *Innovator Under 35* title by Massachusetts Institute of Technology
November 2016	First public contract with State Treasury of Poland
March 2017	First private contract in Poland with TUiR Warta SA (Talanx Group)
May 2017	First Polish patent in the area of relational databases awarded by European Patent Office
July 2017	First evaluation tests of DataWalk platform in the US (with the Fortune100 company)
September 2017	First patent awarded in the US
2017	TUiR Warta was awarded for the implementation of advanced analytical platform DataWalk by FutureTech Awards
January 2018	First international contract with HDI Sigorta A.S., Turkey (Talanx Group)
June 2018	Grants of PLN 1.4 million total value received from the Polish Agency for Enterprise Development (PARP)
September 2018	First contract in the US with the Northern Virginia Gang Task Force for the production implementation of DataWalk system
October 2018	Second contract in the US with Liberty Mid Atlantic Hight Intensity Drug Trafficking Area

Source: Company, DM BOŚ S.A.

3.2. The Group's structure

DataWalk SA (based in Wrocław) is a parent company in the DataWalk Group. It holds 100% of DataWalk Inc., seated in Wilmington, Delaware in the United States (acquired in July 2016).

Fig. 5 *DataWalk's Group structure*



Source: Company

3.3. Key Personnel

People are the most valuable asset of each company at an early stage of development

People are the most valuable asset of each company at an early stage of development, especially when it comes from the European country and targets globally the most innovative US market. Experienced and renowned managers are the Company's ambassadors who facilitate expansion on the foreign (especially US) markets. For potential investors the engagement of successful entrepreneurs with a strong track record in start-up development proves the credibility of a whatsoever complicated and difficult to evaluate concept. DataWalk's technology was good enough to attract the attention of people with a proven track record in the development of start-ups from the Silicon Valley. Below we briefly outline profiles of DataWalk's key management.

Paweł Wieczyński

- The CEO and co-founder of DataWalk Group,
- PHD in economics from Wrocław University of Economics,
- Responsible for European operations,
- Coordinates the EMEA operations,
- **Founder and investor in several early stage companies,**
- Business angel.

Krystian Piećko

- CTO and co-founder of DataWalk Group,
- **Creator of DataWalk platform, with unique skills in data processing technologies (owns several patents in this area),**
- Responsible for technological development,
- Awarded with the *Innovator under 35* award by MIT Technology Review in 2016.

Gabor Gotthard

- Board member and investor in DataWalk Group since 2012,
- CEO in DataWalk Inc., responsible for contracts in the US,
- **37-year experience in the high-tech enterprise IT segment,**
- **Former Vice President in 3ParData, where he secured US$ 100 million funding from i.a. Oracle and Cisco,**
- **With 3ParData sold to Hewlett Packard for US$ 2.35 billion in 2002, engaged by 3Par investors (VCs) to help their portfolio companies,**
- **Developed 7 technology product lines from concept to monetization.**

Christopher Westphal

- Chief Analytic Officer in DataWalk Group,
- Board member in DataWalk Inc., responsible for contracts in the US,
- Oversees the analytic designs and functions for DataWalk platform,
- **Independent consultant advising the US Government, Law Enforcement, Healthcare/Insurance, and Finance/Banking on human-assisted analytic and sense-making solutions to expose patterns/trends; specializing in Big Data,**
- **Co-founder and former CEO of Visual Analytics (specializing in patterns analysis), which was sold to Raytheon Cyber Products; then Vice-President in Raytheon for three years,**
- **Investigation analysis guru; the author of three books in the field of investigation analysis.**

Robert Thomas

- Board member in DataWalk Inc.,
- Responsible for marketing strategy and development of DataWalk platform,
- **37-year experience in marketing of technology companies, i.a. Hewlett Packard and NetApp,**
- **Experience in development of start-up companies (marketing leader/head (VP level) for multiple companies).**

Andrzej Frys

- DataWalk's investor and head of System Engineering, responsible for all of the implementations in EMEA region for our Company,
- **Created and implemented theoretical model of Internet network in 80s (cocreator of NASK),**
- **Co-founder and Board Member responsible for R&D and implementations of TETA SA company (one of the largest vendors of enterprise software in the region),**
- Investor and business angel for many various IT startups.

Kamil Góral

- Started as individual contributor in DataWalk, now head of solutions marketing for EMEA region,
- **13 years of experience in enterprise product sales and marketing,**
- Ex-leader (director reporting to the Board) of marketing for ERP, cloud-based solutions and Business Intelligence product lines in Comarch, responsible for marketing strategy, creating and implementing new products and validating possibility of international expansions.

Mateusz Ciesielski

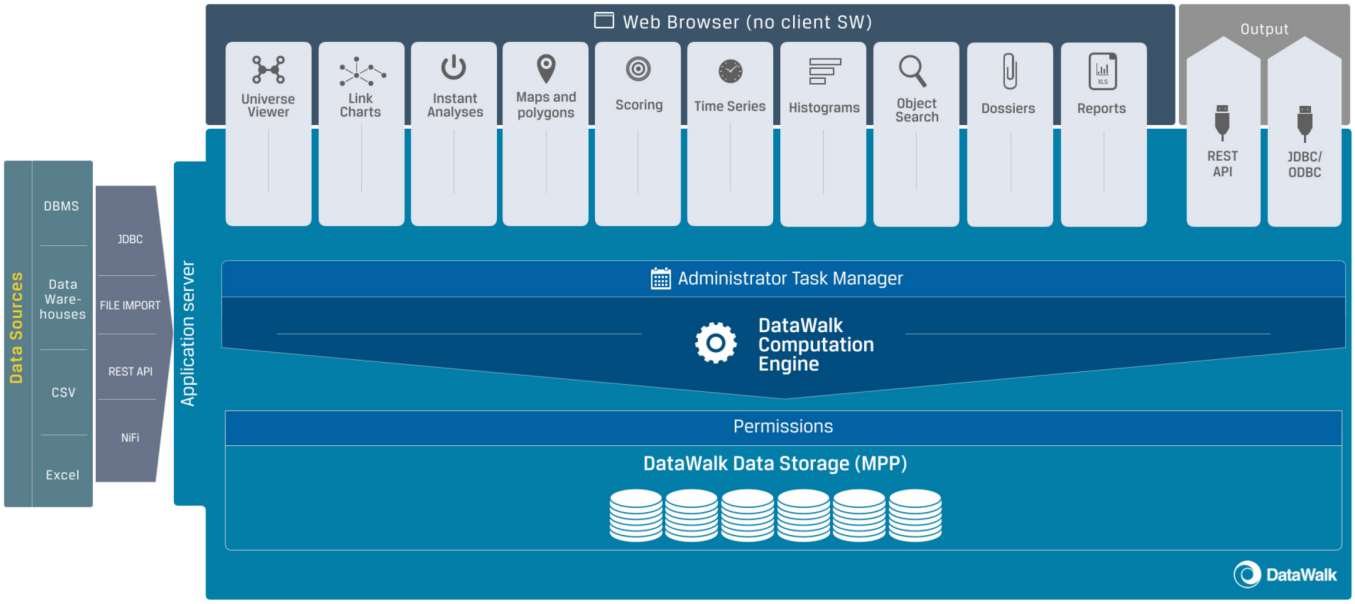
- Started as individual contributor in DataWalk, now head of sales for EMEA region,
- 12 years of experience in enterprise products sales,
- **Highest number of new customer accounts acquired during his stay in SAS Institute (global leader in analytics) in Poland.**

3.4. The product

Open platform for links analysis, offered as a COTS product

DataWalk system provides a complete integrated and open platform for the link analysis which is offered as a COTS (*commercial off the shelf*) product that does not require building the final solution from different components. **DataWalk system allows for combining diverse data from different and unrelated sources, both internal and external which are created and stored in different formats.** It is also equipped with the functionality of processing incomplete and so-called dirty data. DataWalk offers ready-to be-used tools for presenting the results of data analysis, expert rules and data storage system.

Fig. 6 *DataWalk system architecture and its key functionalities*



Source: Company

DataWalk platform serves as a central knowledge database and simultaneously allows users (both technical and business) to initiate queries and getting results. **Its interface is intuitive and user-friendly which is an advantage over rivaling solutions** which often require expertise in programming and scripting languages such as SQL.

No programming skills required to operate the platform

Data sets are visualized as icons and their mutual relationships are in the form of lines. Viewing data and their analysis is intuitive thanks to interactive interface which enables even the users without any programming background like business profile users to perform even complex tasks. The final result is rendered in the form of a table, graph or histogram and is easy to interpret.

The Company claims that even very big data sets (calculated in Petabytes) can be analyzed based on the most complex queries and requests. Besides, **the more complex operation and bigger data volumes, the more visible DataWalk's competitive advantage is with regard to the processing time**.

The full specification of DataWalk platform is enclosed in *Appendix 1*.

Fig. 7 *The comparison of DataWalk platform with traditional analytical systems based on the system implementation at the Client*

DATAWALK CUSTOMER CASE – SAMPLE RESULTS				
6 SOURCES	3.9 B RECORDS	4 TB DATA	20 B LINKS	1 NODE

TYPE OF OPERATION	TRADITIONAL SOLUTIONS	WITH DATAWALK
Implementation	many months, years	weeks
Changing logical data model	1-2 weeks	minutes - hours
Adding new data source	1 week - 1 month	1-2 days, even hours
Creating new alert rule	few days	minutes - hours
New complex analysis with new source	hours, days	minutes - hours
Complex queries, computation time	many hours	60x faster
Programming required?	Yes - many hours	none
SQL/ Scripting language required?	Yes - many hours	none

Source: Company

DataWalk platform provides the functionality of interactive visualization of source data and results of queries and analyses which are presented in the form:

- histograms,
- link analysis,
- geospatial analysis,
- time sequence analysis,
- pivot tables, and
- interactive graphs.

New data source can be added within minutes or hours

Many traditional systems are frequently lacking in flexibility and call for specialist services that take months whenever the user wants to add a new data source or modify a physical structure of the analytical background. **With DataWalk any adding and integrating a new data source can be done within minutes or hours.**

3.5. DataWalk applications

Applications

DataWalk platform can be used wherever there is a demand for link analysis of big data volumes which are often dispersed data or coming from different sources as for example in the insurance, debt collection, money lending, banking, telco sector or in the public administration. DataWalk platform can be used, among others, in:

- fast creation of new analyses,
- testing of new ad-hoc hypotheses,
- monitoring and analyzing business processes top-down (from indicators for data sets to single objects),
- creation of alerting backgrounds with multidimensional scoring (automatic scoring of interesting events or objects), and
- fast search for all available information about people, objects and events as for example with respect to GDPR (general data protection regulation) requirements.

For insurance and public sector

Currently DataWalk focuses on two segments:

- solutions for the **insurance sector** – DataWalk platform helps to detect fraud in various fields of insurance including automotive, medical, pharmaceutical, real estate, etc., and
- solutions for the **public sector** (incl. law enforcement and intelligence investigation for government agencies) – DataWalk platform helps to prevent crimes like human and drug trafficking, insider trading, etc.; helps to identify gangs.

The offer for other sectors and new applications may be added in the future.

Under the link **https://datawalk.com/resources/** there are videos that illustrate DataWalk functionalities; as for example, the use of data analysis in identification and tracing data of the human trafficking suspect.

4. Market and competition

- **Whereas the estimates on the size of the global Big Data market materially vary from source to source, they all univocally point towards its further brisk growth in the coming years.**
- **The link analysis segment (DataWalk's target market niche) may be worth globally c. US$ 5 – 10 billion per annum; some key underlying market trends suggest its possible vivid growth in the foreseeable future.**
- **Among the key drivers for the link analysis software we see: (i) exponential growth of data stored/ processed by organizations, (ii) development of Internet of Things, (iii) growing risks related to (and outlays for) broadly defined security of organizations/ nations, (iv) increased counteracting to money-laundering and tax-evasion, (v) drive towards the automation of the large data sets analysis, (vi) growing urge to include dark data, dirty data and orphaned data in the data sets subject to analysis, and (vii) need to make the large-data-sets analytical tools more end-user-friendly.**
- **Palantir and IMB i2 are the main competitors of DataWalk in the link analysis domain.**
- **Palantir's and DataWalk's target customer segments are non-overlapping (the 'floor' of the former is the 'ceiling' of the latter); product-wise, Palantir is many-fold more expensive (both in terms of money and implementation time), albeit of comparable ability to handle huge data sets.**
- **DataWalk beats IBM i2 ANB in terms of the size of the data sets it can handle, platform's agility and cost.**
- **DataWalk is a potential market disruptor: not only is the Company offering a platform that is many-fold cheaper than competitive tools on the market, but also DataWalk's system is more effective.**

4.1. The Big Data and link analysis markets: size, outlook and drivers

Big Data market...

DataWalk's key activity is focused on the link analytics which belongs to the vast area known as Big Data. Big Data includes capturing, storage, processing and analysis of big, variable and diverse data sets; processing and analysis is difficult yet valuable as they can lead to an acquisition of new information not available otherwise. Depending on industries and volume of data processed, analyzed data are measured in terabytes or petabytes; this applies mostly to the public administration and social media. With respect to practical applications as in, for instance, the economic events analysis, processed data are mostly counted in gigabytes or terabytes.

According to *Forrester* research, until 2020 profit of organizations basing their decision making on the data analysis will reach US$ 1.2 trillion.

...seems set to grow

According to *IDC*, the value of the global Big Data market (which includes, as one of components, the link analysis segment, in which – in turn – DataWalk operates) amounted to c. US$ 150 billion in 2017, up from c. US$ 122 billion in 2015 and US$ 130 billion in 2016, and is expected to grow to c. US$ 187 billion in 2019 and c. US$ 203 billion in 2020.

Services will represent more than half of all Big Data and analytics revenue with software representing the second largest category (approx. 30% of the whole; c. US$ 55 billion market in 2019, according to *IDC*). Further on, most of the software revenue is expected to revolve around query, reporting, analysis and data warehouse applications.

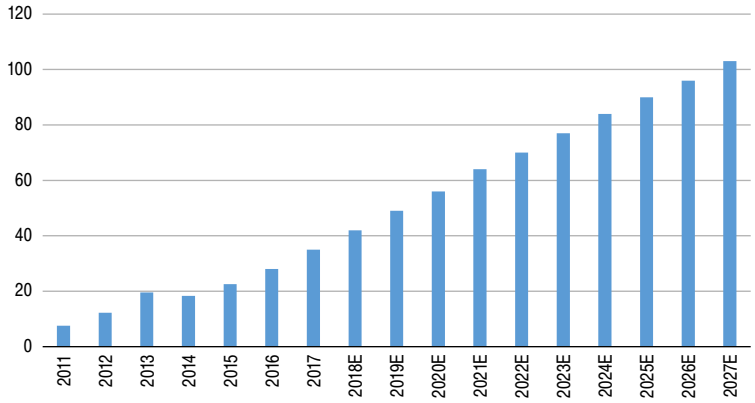
IDC expects the discrete manufacturing[1] to be the largest industry to pursue Big Data, followed by banking and process manufacturing[2], with government, services, telecom and retail also following suit.

These are the large enterprises that will drive the spending, accounting for c. US$ 140 billion in Big Data analytics revenue in 2019 (according to *IDC*), whereas smaller businesses (with <500 FTEs) will account for broadly a quarter of Big Data revenue.

In terms of geographical markets, the US lead the pack being the largest market for Big Data and analytics tools (c. US$ 79 billion in 2017, as per *IDC*), followed by Western Europe (c. US$ 34 billion in 2017), Asia Pacific region (c. US$ 14 billion in 2017, excl. Japan) and Latin America.

Whereas other sources provide materially different (than *IDC*) estimates of the Big Data market size (c. US$ 123 billion in 2025E, according to *Grand View Research*; US$ 56 billion/ US$ 103 billion in 2020E/ 2027E, according to *statista.com*), probably partially due to differences in definitions and metrics used to 'measure' the market, their **common feature is the expected solid growth of the Big Data segment in the coming years**.

Fig. 8 *Big Data market (based on revenue); 2011-2027E (US$ bilion)*



Source: https://www.statista.com/statistics/254266/global-big-data-market-forecast/

From the technological angle forecasts for the Big Data market coincide with the money values forecast; the *International Data Corporation* (*IDC*) envisages a ten-fold increase in worldwide data by 2025, to 16.3ZB from 16.1ZB in 2016. At the same time due to increasing computing capacities and data implementation a share of data generated by businesses is supposed to grow from 30% to c. 60%.

Link analytics segment

We are not aware of any publicly available reports or publications **indicating the value or somehow measured size of the link analytics segment**. According to informal data the sheer value of agreements signed in 2017 by Palantir Technologies amounted to c. US$ 3.5 billion. **According to the Company's estimates, the global market of tools involved in link analytics may generate annual revenues in the range from US$ 5 to 10 billion.**

However available research and publications referring to the global Big Data market unanimously point out to the growing importance of processes related to Big Data (link analytics included) in the global economy which implies both the growing demand for analytical capacities and the dynamic expansion of enterprises developing and offering tools for data processing and analysis.

1 Discrete manufacturing is the manufacturing of finished products that are distinct items capable of being easily counted, touched or seen, involving parts and systems like nuts and bolts, brackets, wires, assemblies and individual products. A discrete product can be broken down at the end of its lifecycle (at least in theory) so its basic components can be recycled. Examples of products made from discrete manufacturing include automobiles, furniture, airplanes, toys, smartphones and defense systems.

2 Process manufacturing is the manufacturing associated with formulas and manufacturing recipes, common in food, beverage, chemical, pharmaceutical, nutraceutical, consumer packaged goods, and biotechnology industries. Opposed to discrete manufacturing, the relevant factors in process manufacturing are ingredients (not parts), formulas (not bills of materials) and bulk materials (rather than individual units).

According to *dataversity.net* analysts, while in 2017 the goal of processing Big Data promoted ever-increasing efficiency and steadily decreasing costs, then starting from 2018 the availability of **Business Intelligence** (BI[3]) based on Big Data for small and medium-sized businesses (and even start-ups) gained more importance. We should expect an increasing demand for relatively cheap tools for data analysis characterized by a short implementation period without the need for any dedicated end-user structure, i.e. available from the Cloud.

A 2017 survey (by *dataversity.net*) of 2,800 experienced professionals working with Business Intelligence predicted the data discovery would become a significant trend. Data discovery has expanded to include, not just the understanding of data analysis and relationships, but also ways of presenting data, to reveal deeper business insights. As a result, visualization models are becoming more and more popular as a way to translate data into useable insights. The predictive analyses which facilitate simulations of future behaviors based on present behaviors are gaining more and more importance replacing a simple analysis of previous behaviors.

The Cloud

According to the management of DataWalk (an assessment that we share), recent forecasts suggest that the Big Data market will develop dynamically and **the Cloud as a place for storage and processing data** will gradually **replace businesses' preferred own IT resources** which would be a consequence of **exponentially growing data volumes** at the organizations' disposal which – in turn – are unable to be processed or analyzed based on transactional systems due to the lack of computing powers, flexibility and possibility of fast resources increase. Additional advantage is a higher level of security and lower maintenance costs.

IoT

Another trigger for moving resources into the Cloud will be the expansion of a phenomenon known as the Internet of Things (IoT)[4]. According to *Gartner*'s analysts, the number of on-line devices (apart from computers and mobile phones) will grow from 8.4 billion in 2017 to 11.2 billion and 20.4 billion, respectively, in 2018 and 2020.

Security of organizations/nations

Given the sectors which are targeted by DataWalk platform (law enforcement agencies, intelligence, insurance, financial system ministries/ regulators), the management considers as serious the growing risk related to security of the organizations or national security (risk of extortions, increase in crime, terrorism, cyber-attacks or military conflicts where data and their analysis have a crucial role in counteracting). To visualize the scale of the problem (constituting effectively the other side of the market opportunity for vendors of software enabling crime detection and counteraction), please note that:

- according to *Global Financial Integrity*, the 'business' of transnational crime is worth globally between US$ 1.6 trillion and US$ 2.2 trillion per annum,
- according to the *UN*, global crime proceeds stand at 3.6% of the world's GDP, and
- according to *Cybersecurity Ventures*, the **cybercrime will cost the world US$ 6 trillion annually by 2021** (up from US$ 3 trillion in 2015), representing the greatest transfer of economic wealth in history (making it more profitable than the global trade of all major illegal drugs combined).

Money laundry/tax evasion

From the Company's perspective another essential trend is a **growing scale and quality of actions counteracting money laundering and tax evasion**. Given an increasing scale of attempts to legalize money from unlawful activities, numerous governments (both in the US and EU)

3 Business intelligence (BI) comprises the strategies and technologies used by enterprises for the data analysis of business information. BI technologies provide historical, current and predictive views of business operations. Common functions of business intelligence technologies include: (i) reporting, (ii) online analytical processing, (iii) analytics, (iv) data mining, (v) process mining, (vi) complex event processing, (vii) business performance management, (viii) benchmarking, (ix) text mining, (x) predictive analytics and (xi) prescriptive analytics. BI technologies can handle large amounts of structured and sometimes unstructured data to help identify, develop and otherwise create new strategic business opportunities. They aim to allow for the easy interpretation of these Big Data. BI is most effective when it combines data derived from the market in which a company operates (external data) with data from company sources internal to the business such as financial and operations data (internal data). When combined, external and internal data can provide a complete picture which, in effect, creates an "intelligence" that cannot be derived from any singular set of data. BI applications often use data gathered from a data warehouse or from a data mart.

4 The Internet of Things is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect, collect and exchange data. IoT involves extending Internet connectivity beyond standard devices (such as desktops, laptops, smartphones and tablets) to any range of traditionally non-internet-enabled physical devices and everyday objects; embedded with technology, these devices can communicate and interact over the Internet, and they can be remotely monitored and controlled.

and international organizations seek solutions to curb the extent of these efforts. Simultaneously many governments intensify activities targeted at improving the efficiency of the tax collection and enforcement system, especially from economic operators. These activities need analyzing of enormous sets of data related to current economic and financial operations of the entities under investigation. In consequence in recent years European governments and the US administration systematically increase the number of operating systems for detecting tax frauds and crimes (money laundering, VAT extortions, etc.) and counteracting terrorism and other factors instigating geopolitical instability.

Automation of analysis

Thanks to expansion of **computerization and automation of Big Data analysis**, including link analytics, observed in the areas of economy that provide services to mass clients (banks, media, debt collection, etc.), speed and efficiency of data processing is constantly growing along with the cost reduction. This in turn facilitates easier accessibility of data processing tools for entities that couldn't afford buying them before and also translates into growing interest in these tools from the part of entities that didn't see any application for them in their operations before.

Dark data, dirty data and orphaned data

What's important from the Company's point of view and its software, according to expectations, the evolution of demand for IT solutions will also tackle the challenges related to **dark data[5], dirty data and orphaned data[6]**, which are all kinds of data lacking context, inaccurate, or those needing digitalization. Tools of previous generation are often unable to analyze sets of these data at all or the result is invalid. The DataWalk solution offered by the Company is able to analyze data sets burdened with abovementioned faults which positions it well against the competition.

End-user friendliness

Last but not least comes an **increase in end-user friendliness of data analysis tools** which includes the ability to develop presentations of data analysis results stemming from systematic modifications and fine-tuning by the vendors. Data analysis results visualization is becoming more and more common and popular which is an important feature as it massively contributes to increasing the numbers of potential recipients of these results, who then may become buyers of analytical systems and recruit from the entities that did not consider the use of these tools before.

4.2. The competitors

The Company with its DataWalk platform focuses its activity on the **link analytics** which constitutes a small fraction of the Big Data and analytics market. Link analytics deals with searching for direct and indirect links and relationships among data.

Palantir and IBM

The main competitors in the field of link analytics are IBM companies offering their **IBM i2** solution and **Palantir Technologies**; as a matter of fact these two companies are the sole competitors to DataWalk in the enterprise area and data sets bigger than 500,000 of objects.

Comparable to DataWalk analytical tools offered by the competitors can be classified according to:

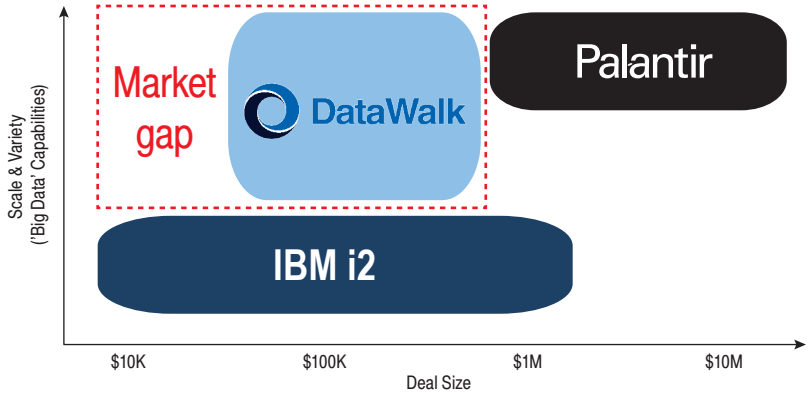
- **size and complexity of data sets** which they are able to analyze,
- **technological costs** which translate into an implementation price in a single organization, and
- **self-reliance** (**functioning independently of other** often highly integrated **systems**).

Please refer to *Figure 9* regarding the competitive positioning of the Company's product in relations to competitors.

5 Dark data are mostly data which (i) are not stored or processed by the company because they are not aware of its existence, (ii) the company has but does not use its potential or value because it does not know how to process them; here belong all data requiring digitalization, (iii) data gathered but not processed due to expected low benefits not offsetting the workload.

6 Dirty data and orphaned data are all kinds of inaccurate, incomplete or error/ deficiency laden data sets and those lacking context as well.

Fig. 9 *Competitive landscape of link analysis solutions; Agility versus cost*



Source: Company

4.2.1. Palantir Technologies

Palantir = long implementation period + multiple personalizations

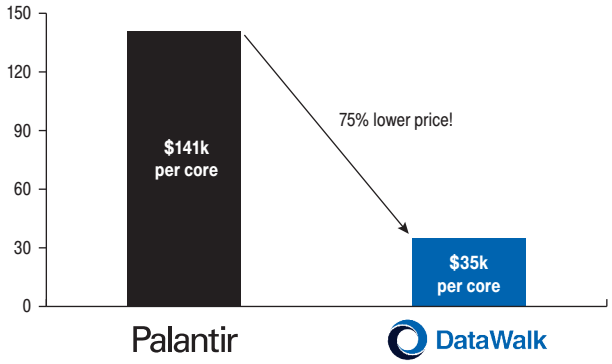
Whereas **Palantir** offers various systems directed at various markets and various analytics fields, only Palantir Gotham – one of the two main products dedicated to link analytics – directly competes with DataWalk platform. What differs Palantir's tools from DataWalk system is a materially **longer implementation period** and a **vast number of required personalizations**, i.e. creating a special code for the clients enabling the integration of Palantir systems with the client's environment with full utilization of functionalities. Palantir systems are similar to DataWalk system with respect to handling big data (in TB). Palantir systems environments are implemented based on the 'black-box' principle which means that clients (users) have a very limited access to algorithms and stored data.

Palantir's business model is based on the sale of a license to systems which generates about a half of its revenues, while the remaining revenues come from the sale of services needed to be implemented and the system maintenance. To DataWalk's management knowledge, the cost of Palantir system's implementation and operating is estimated at several-several dozen million US$.

Palantir = more expensive (money + time) but versatile

Briefly, **DataWalk is many-fold cheaper than Palantir, both in terms of money** (cost of license and implementation/ maintenance services) **and time** (duration of the implementation), yet **comparable in terms of a size of data set it can handle**. **From the target client segment/ deal size perspective, DataWalk and Palantir do not seem to overlap** (Palantir's 'floor' is DataWalk's 'ceiling').

Fig. 10 *DataWalk; Dramatically lower price than Palantir Gotham*



Source: Company, GSA Schedule (publicly available pricing of products approved for purchasing by US Government)

4.2.2. IBM i2

IBM = inferior in terms of data set size, cost and agility

IBM i2 technology offered by **IBM** dates back to the 90s, so it is **relatively old** and is **based on an architecture preventing effective processing of big data volumes** (in TB). For big data environments the implementation is fully **personalized**, including IBM services, and its cost can amount to even tens of millions of US$. When IBM software is being used for visualization of an excel-size type of data on a single laptop it can be used without IBM Global Services or other system integrator services.

The most known solution from the IBM i2 portfolio is **Analyst's Notebook** (ANB). IBM i2 ANB is an independent desktop application for a single user and small data sets. DataWalk is on the other hand a solution dedicated to work distributed among many users that can be scalable to huge data sets.

Fig. 11 *Comparison of DataWalk platform with IBM I2 ANB*

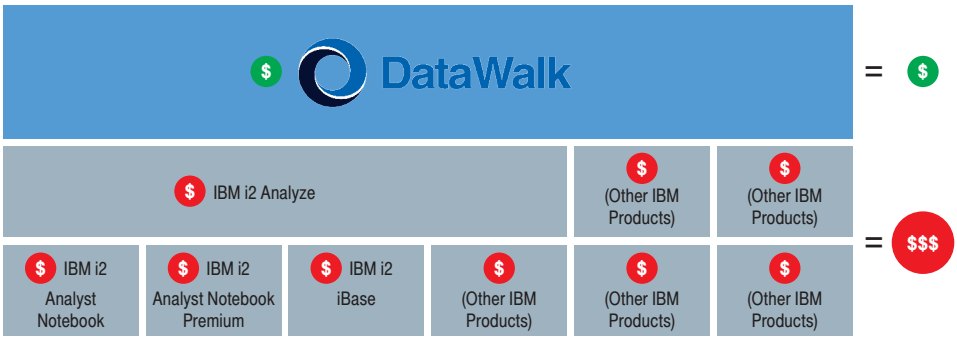
	IBM I2 ANB	DataWalk
System inception	The 90s	2010
Purpose	Application for a single workstation for a single user or small groups (max. several users)	Analytic platform dedicated for multiple users simultaneously installed on the main sever
Link analytics	Yes	Yes
Data base shared	No (need to purchase iBase data base additionally)	Yes
Data and base preparation	Limited (need to use additional IBM i2 tools)	Yes
Data volumes	Limited	Easy handling of very big data sets

Source: Company

For the direct comparison of these two solutions the remaining IBM i2 systems allowing for structuring, joining and storage of data should be taken into account. These operations can take a lot of effort consuming weeks or even months of workload. The obstacle is a necessity for harmonization of the new data with the prepared environment and need for stable (cleaned and complete) data sources which constitutes additional burden and hence limits the analysts' efficiency.

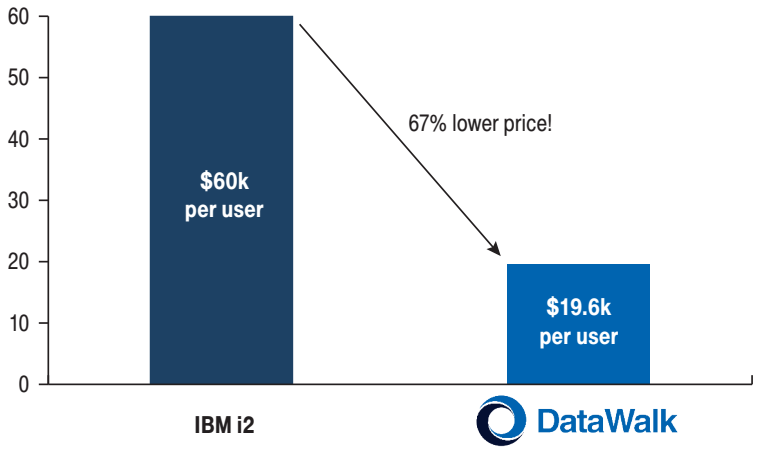
Contrary to DataWalk (or Palantir system) IBM i2 is just a marketing trade name for a group of systems to be implemented in order to be able to process data with respect to final link analytics, not a name of one integrated system. According to *GSA Schedule* (publicly available pricing of products approved for purchasing by US Government), the system offered by IBM is 3-4x more expensive than DataWalk.

Fig. 12 *DataWalk/ IBM link analysis product positioning*



Source: Company

Fig. 13 DataWalk; Dramatically lower price than IBM Analyze



Source: Company, GSA Schedule (publicly available pricing of products approved for purchasing by US Government)

Cutting a long story short, **DataWalk beats IBM i2 ANB in terms of the size of the data sets it can handle, platform's agility and cost**; DataWalk intends to compete and gradually displace IBM's solution at the customers from the targeted segments (insurance, law enforcement).

4.2.3. Remaining entities

Apart from the abovementioned competitors there are entities that offer niche systems for the purpose of link analysis and others with systems at early development stages that are not perceived as direct competitors for DataWalk. The following entities belong here:

- **Cambridge Semantics**, offering software mainly for the biotechnological and medical sector;
- **Centrifuge Systems**, that offers a system operating on relatively small data volumes;
- **BAE Detica**, offering the system developed in the 70s in cooperation with/or directly by the British intelligence services, using the expensive technology (its implementation in an average-sized insurance company costs EUR 30-40 million taking several years); DataWalk does not consider this solution as competitive given its outdated architecture and cost;
- **Forcepoint**, acquired by Raytheon which incorporated Visual Links system, acquired in turn thanks to an earlier acquisition of Visual Analytics (founded by Christopher Westphal, the present member of DataWalk Inc. management and the Issuer's shareholder); Visual Links could have been perceived as a direct competition for DataWalk, however currently this technology is applied, as are Forcepoint's products, for cybersecurity purposes that do not fall within the scope of interest of DataWalk – therefore, the Raytheon Group's products do not directly compete with DataWalk's solutions.

4.2.4. Complementary and alternative solutions

In some main fields of DataWalk's application where the crime detection and crime prevention belong, there are other, aside from the data analytics systems, possibilities of problem solving such as:

- **Physical security procedures coupled with hiring specialist to monitor and enforce them.** Hiring detectives and investigators who can provide their services with respect to assigned tasks without or with the limited use of IT systems is an alternative to the application of advanced IT systems. However the efficacy of human-based solutions becomes more and more limited which is connected with increasing volumes of data frequently unrelated, from different sources and this in turn contributes to **withdrawing from human-based solutions**.

- **Traditional reporting systems expanded with analytical capacity as regards fraud and extortion counteracting.** These systems are offered among others by **SAS Institute Inc.** and NYSE-listed **FICO** (for SAS link-based analytics is not a priority; additionally their product is fairly old). The aforementioned companies do not constitute any direct competition for DataWalk solutions though they can function independently in case of smaller data sets with uniform structure or less complex analytical demands. In some cases they can cooperate with DataWalk generating a number of synergies.

- **Proprietary dedicated systems either developed in-house or externally.** Mostly these solutions are significantly more expensive than tools offered to other entities which stems from the fact that a single entity needs to cover the burden of system development, whereas in case of purchase from an third-party vendor of a system aimed at distribution to many external clients, the cost of the system's development is 'shared' among many accounts. Additionally such a system seems to be functionally less developed (as it is built with reference to the experience base limited to a single client environment) than systems based on experiences collected from a group of diversified clients: of different sizes, different industries, with different business models and operating on different markets. This model is most frequently used in case when less complex demand meets with expected flexibility of further tool development or its independence. For example New York Police Department withdrew from the cooperation with Palantir Technologies due to costs and decided to develop its own system.

4.3. Market disruptor made in Poland

Market disruptor

We believe that DataWalk is an example of a potential disruptor to the global market of link-based analytics. The Company offers a new solution in the market of link analysis and delivers distinctive value for the user. Not only has DataWalk proposed a platform that is many-fold cheaper than competitive platforms on the market, but also DataWalk's system is more effective. Essentially, by choosing DataWalk platform over other systems a client may come out 5-10 times better off. Please refer to the *Figure 14* for DataWalk comparison vs competitive systems.

Fig. 14 *DataWalk platform comparison to competition*

Area of comparison	i2 Analyze (IBM)	Gotham (Palantir)	DataWalk (DataWalk)
Price	US$ 60k per user	US$ 141k per core	US$ 35k per core (75% lower price than Palantir) US$ 19.6k per user (67% lower price than i2 Analyze)
Time of implementation	Several months to years	Several months to years	Several weeks to several months (multiple times shorter than rivaling systems)
Handling dirty and orphaned data	No	Yes	Yes
Amount od data possible to process	Limited	Large volume of objects	Large volume of objects
Time needed to add a new source of data	1 week - 1 month	1 week - 1 month	1-2 days
Requires programming skills to process queries	Yes	Yes	No
Time of processing of complex queries	Many hours	Many hours	Several minutes to one hour

Source: Company, GSA Schedule (publicly available pricing of products approved for purchasing by US Government), DM BOŚ SA

5. Business model and strategy

- **The Company's key product is a commercial-grade Big Data software platform for connecting numerous large data sets, often dirty and incomplete, from different sources and in different formats.**
- **The Company focuses on solutions for the insurance and public sector (including law enforcement and intelligence services).**
- **DataWalk is currently heading to the third (out of five) stage of technological start-up development.**
- **Only 2.5% of society are early adopters of new technologies.**
- **A portfolio of well-known and recognizable clients will facilitate expansion in the Stage 4.**
- **Recent American contracts are crucial for DataWalk development in the US.**
- **The implementation of DataWalk's platform brought several dozen PLN million savings for Warta, one of the leading insurance companies in Poland.**
- ***Land and Expand* strategy: by closing a single, smaller deal, the Company works alongside the client as a trusted partner; this makes it easier to expand and capture more opportunities over time.**
- **Thanks to offering an off-the-shelf product DataWalk may cooperate with IT system integrators to implement its system in high-stake contracts; this way clients may work with partners they already know, and DataWalk does not have to start the relationship from scratch.**

5.1. Business model

DataWalk operations are based on the scalable business model of a vendor of Enterprise class IT products dedicated to global markets. Based on the evolving business model, the Company sells COTS (Commercial off-the-shelf) solutions requiring a mere configuration of available functionalities as needed by a particular user.

The Company's key product is a commercial-grade Big Data software platform for connecting numerous large data sets, often dirty and incomplete, from different sources and in different formats.

The Company focuses on solutions for two sectors: the insurance and public sector (including law enforcement and intelligence services), both on the US (first of all) and EMEA market.

Less is more

Due to specific features of solutions, depending on a given sector (metrics, indicators, vocabularies, etc.), the Group intends to limit as much as possible (i) pre-implementation consultations, (ii) activities related to configuration, and (iii) after sales support which means becoming more and more independent of human resources needed for assistance and maintenance. For the reference, the competitive system offered by Palantir requires often the ongoing post-implementation service involving dozens of people employed at the client's site.

Operating segments

The operating segments of the Company:

- License sale:
  - full commercial license (for a system production version) and
  - pilot license;
- Sale of services (implementation and technical support),
- Other sales.

Revenue distribution

A typical revenue split for commercial implementations of enterprise class IT products includes a one-time payment for a license in the first year excluding implementation revenues which can be diversified depending on the client, and up to 20% of the mentioned before payment in the following years including payments for the system maintenance. A value of a single implementation of DataWalk platform is to range from several thousands to one million dollars.

Average value of contract

DataWalk's strategy targets the market niche with the average single contract value of c. US$ 200,000 (a pony contract). This way DataWalk fulfills a market niche located just below Palantir's targets (with respect to a contract value). However, the Company will also acquire larger contracts with the average value of c. US$ 5,000,000 throughout five years (an elephant contract). DataWalk assumes that the elephant contract will happen every five deals.

A long-term strategic goal of the Group is to join the world leading vendors of Enterprise class IT tools for link analysis of big and very big volumes of diverse data.

Mid-term goal

An optimal mid-term goal of the Group is an acquisition of c. 20 clients till 4Q21 – 1H22 (for example, from the US) using the DataWalk platform for commercial purposes for their day-to-day business serving as a global reference base of clients.

5.2. Five stages of start-up development

Probability of success grows with each stage completed

DataWalk develops in line with the standards for technological companies, especially Israeli and American ones, including those NASDAQ-quoted. Israeli (and Polish as well) entities differ from American ones in that the former's access to capital is more limited than the latter's, in particular in the early stages of a project development. The development of these enterprises consists of many stages and **with each stage completed the success rate grows**. **Given the complexity of planned activities, the period of their full implementation is estimated by DataWalk's management at 10-15 years starting from Jan. 2014**; however, DataWalk Group is likely – in our view – to be offered high value acquisition proposal before it matures as a global leading business in the category of link analysis.

Fig. 15 Five stages of technological start-up development

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
	Conceptual stage	**Productization (go to the market)**	**Commercial implementation stage**	**Scaling stage**	**Business maturity**
General characteristics	Seed phase of a start-up	New technology is implemented in production	Optimization of sales and implementation process	Achieving stable portfolio of clients, numerous implementations and positive margins	Full business stability
	New technology is invented, functionality is verified	Best solutions for clients are found	Gross profit break-even (adjusted for CAPEX and OPEX)	Entering stable phase of development	High chance of take-over
	Does the technology work?	First implementations on local market	Significant growth of revenues	Possible acquisition target	Net profit break-even is achieved
DataWalk's period	1Q14-3Q15	3Q15-1H19	1H19-1H22	1H22-2H24	From 2025
DataWalk's milestones	DataWalk engine's tests executed in the databases of over 20 Polish companies	Tests in the US began	Wide recognition of DataWalk's solution achieved	A reference base of c. 100 world class clients built	Leader of the market niche position is achieved
	Alpha version and new interface built	Reference base in Poland built	Target pricing in the US established	A partnership with a global integrator signed (Go To Market Partnership)	
	Key employees obtained	First reference in the US obtained		Final confirmation of business model's success	
		Three full implementations achieved (TUiR Warta, HDI Sigorta, Ministry of Finance)			
		Confirmation of functionality obtained			
Funding rounds	Round A – 2Q2015 (PLN 21.2 million)	Round A1 – 2H17 (PLN 12 million)	Round C** – 2022 (c. 15-25% dilution)	Round D** – 2024 (c. 10-20% dilution)	No
		Round B – 1Q19 (PLN 60 million*)			
Risks	Technology, funding, internal marketing	Productization, marketing, sales	Scale-up, marketing, sales, business development	Scaling, execution, business development	General business
	Highest risk	Decreasing risk	Decreasing risk	Small risk	Lowest risk

* Assuming (i) the maximum number of shares issued and (ii) issue price at PLN 44.44 per share
**C and/or D rounds may not happen if the Company decides to optimize strategic goals for profitability over growth (switch to organic growth possible after B round)
Source: Company, DM BOŚ SA

DataWalk is currently heading to Stage 3 of development

DataWalk Group has already obtained two production contracts in the United States marking the end of Stage 2 of development. The Company will now focus on Stage 3 trying to obtain a solid reference portfolio of well-known and recognizable clients which would facilitate expansion in Stage 4.

5.3. Funding rounds

Product creation and its commercialization, especially in the Enterprise class IT segment, entails a multi-year, sometimes even a decade long, investment process. Hence DataWalk's activities can be regarded as a constant ongoing investment process. **A cash flow break-even is usually achieved at the last stage of development, therefore the Company needs external funding for the whole process.** Below, we list DataWalk's funding rounds to date.

Fig. 16 DataWalk's funding rounds

Date	Amount (PLN million)	Share Class	Issue price (PLN)	Post-money Valuation (PLN m)	Key Investors
October 2011	Undisclosed	Series A, B	Undisclosed	Undisclosed	Mr. Krystian Piećko and undisclosed investors
May 2012	0.30	Series C	2.0	2.8	Undisclosed investors
September 2012	0.39	Series D	5.5	8.1	Undisclosed investors
April 2013	1.50	Series E	10.0	16.2	Undisclosed investors
February 2014	2.00	Series F	12.0	21.4	Undisclosed investors
November 2014	3.08	Series G	14.0	28.1	Undisclosed investors
April 2015	6.00	Series I	29.0	73.5	Undisclosed investors
August 2015	21.15	Series J	45.0	135.2	Investors TFI and several undisclosed investors
November 2017	12.07	Series L	34.0	125.1	Investors TFI and Aviva TFI

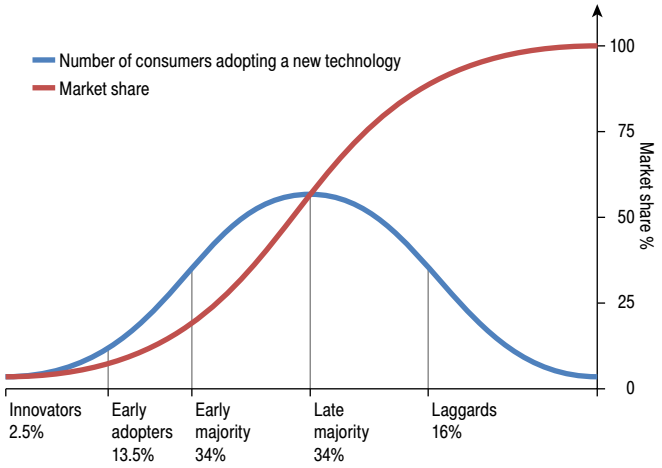
Source: Company, DM BOŚ

5.4. Adoption cycle of technology

A hardship of new technology adoption

Going with a new technology to the market involves a huge amount of effort and uncertainty. Even if you have a good product the hardest thing is to convince clients to take risk of buying a completely new product when they have a multitude of proven alternatives. The **technology adoption life cycle** divides potential new technology adopters into five adopter categories, according to the degree to which a person is ready to adopt innovative products or services as compared to the rest of society.

Fig. 17 *Technology adoption lifecycle*



Source: https://ondigitalmarketing.com/learn/odm/foundations/5-customer-segments-technology-adoption

Adopters

According to the model, the first group of people to use a new product is called **innovators** followed by **early adopters**. Next comes the **early majority** and then the **late majority**. The last group to adopt a product is called **laggards**. Innovators are only 2.5% of society. They are more educated, more prosperous and more risk-oriented. They are willing to buy a completely new unproven product, with the objective of achieving a very significant competitive advantage relative to users of older solutions. They have confidence in their technical ability to gauge risk and are also more tolerant of risk in general. In turn, early adopters (13.5% of society) are somewhat pickier in their choices than innovators, but have a positive attitude towards the change and high social participation. As a result, they will usually become the opinion leaders for the rest of the market.

Warta – innovator

In the case of DataWalk, Polish TUiR Warta was the innovator, who signed the first ever production contract with the Company. The second production contract in Europe was signed with HDI Sigorta A.S. and we would call HDI Sigorta an early adopter, as it had already received a proof of DataWalk's system functionality from TUiR Warta (both companies belong to the same Talanx Group). Then, the contracts with Northern Virginia Gang Task Force and Liberty Mid Atlantic Hight Intensity Drug Trafficking Area followed. However, we would still classify these institutions as innovators, since they signed the first production contracts in the United States with a completely unknown company from Eastern Europe.

Strong reference base is crucial

Both American contracts are crucial for DataWalk development in the US. After successful implementations DataWalk will not be a completely unknown company with unproven product any more. In fact, in view of American prospects, it should become a promising start-up with a proven successful implementation of its system with two trustworthy US government institutions. **That is why obtaining a strong reference base is crucial for the Company's future marketing success.**

5.5. Contracts

In the *Figure 18* we present the list of currently most important reference contracts which should help the Company in future client acquisitions.

Fig. 18 *Reference base of key contracts*

Contracts	Area	# of objects	# of links	Date of implementation	Duration	Type
BZ WBK SA	Analytics, data quality	10,000	50,000	Sept. 2015 - Aug. 2016	11 months	Repository of banking products
Ministry of Digital Affairs (Poland)	Analytics, data quality, compliance	3,900,000,000	20,000,000,000	Nov. 2016 - Feb. 2017	3 months	Pilot/ analytical project
TUiR Warta SA	Fraud detection	2,750,000,000	5,790,000,000	Mar.-Oct. 2017	6 months	Full implementation
STU ERGO Hestia SA	Fraud detection	33,000,000	351,000,000	Aug.-Oct. 2016	3 months	Pilot/ analytical project
UNIQA	Fraud detection	62,000,000	422,000,000	Jan.-Feb. 2017	2 months	Pilot/ analytical project
HDI Sigorta A.S.	Fraud detection	22,000,000	333,000,000	Apr.-Oct. 2017	6 months	Analytical project/ full implementation in progress
Generali SA	Fraud detection	9,000,000,000	471,000,000	Apr.-Oct. 2017	6 months	Pilot/ analytical project
4Mats.pl	Analytics (E-Marketing)	1,500,000,000	7,000,000,000	Jun. 2015 - Feb. 2016	9 months	Full implementation
Ministry of Finance (Poland)	Anti Money Laundering	Undisclosed	Undisclosed	Undisclosed	Undisclosed	Full implementation
Northern Virginia Gang Task Force	Law Enforcement	No details yet	No details yet	No details yet	No details yet	Full implementation
Liberty Mid Atlantic High Intensity Drug Trafficking Area	Law Enforcement	No details yet	No details yet	No details yet	No details yet	Full implementation

Source: Company, DM BOŚ SA

Huge success at Warta

The implementation of TUiR Warta contract has been probably the Company's greatest success so far, as it proved the DataWalk system's spectacular effectiveness. The contract was in the area of fraud detection in Warta's insurance operations and the client's aim was to improve the fraud detection parameters. The system was fully implemented within 6 months (Mar.-Oct. 2017) and, in result, **the detection rate of frauds has grown by 60%**. **We believe that it allowed the client to save several dozen millions of PLN a year which is a remarkable result, given probably less than PLN 1 million DataWalk's system cost.** Afterwards Warta presented the system on several sectoral events and was awarded a FutureTech Awards for the implementation of DataWalk's advanced analytical platform. Thanks to this success DataWalk signed a contract with HDI Sigorta (belonging to the same as Warta capital group of Talanx). Further contracts within the Talanx group may still come.

First contracts in the US

The Company has recently signed its first contracts in the United States with Northern Virginia Gang Task Force (NVGTF) (September 2018) and Liberty Mid Atlantic High Intensity Drug Trafficking Area (LMAHID) (October 2018), both in the area of law enforcement and public security. The contracts involve sale and implementation of a perpetual license of the DataWalk analytical platform. The contracts are rather small, however they are crucial for the Company's development – they mark vital milestones of the strategy concentrated around building a portfolio of first references for the DataWalk product in law enforcement and public security applications in the US.

5.6. Land and Expand

The strategy

DataWalk intends to implement a *Land and Expand* marketing strategy which focuses on replaying the effects of successful implementations and business projects in a single organization via further sales and acquisition of new clients within the same capital group or in some way related to the initial client. By closing a single, smaller deal, the Company works alongside the client as a trusted partner. This makes it easier to expand and capture more opportunities over time.

Warta – HDI Sigorta

The first instance of a successful implementation of the *Land and Expand* strategy is a contract struck with Polish TUiR Warta. Following the successful implementation of DataWalk platform Talanx Group (an owner of TUiR Warta) set a precedent in the Company's history and invited the Polish team to commercial talks. The outcome of the talks was a purchase of DataWalk system by HDI Sigorta A.S., Turkish sister company of TUiR Warta SA. In our opinion, further contracts may be signed with German sister companies of TUiR Warta SA

DataWalk will apply a similar commercial strategy to its activities in the public sector, enhanced by the stronger impact of local business partners. The Company may use references from the Ministry of Finance and initiate talks with the equivalents of the General Inspector for Financial Information from over 150 countries-members of Egmont Group[7].

Land and expand opportunities

DataWalk's possible up-sell/cross-sell opportunities within *Land and Expand* strategy include:

- Expanding the number of the platform's users,
- Expanding the amount of data to be processed,
- Implementing the platform in other segments/activities of the client – for example, in case of insurance companies, the platform may be used in various insurance areas like automotive, medical, real estate,
- Upgrading to new generation of products,
- Implementing the platform in sister/parent companies within the same Group,
- Implementing the platform in other government agencies.

5.7. Partnerships

DataWalk has been developing and applying a co-operation formula with potential and actual business partners based on the partnership program in order to increase the odds for new client's acquisition from the insurance industry and public sector.

The partnership program as it is currently assumes various fee and discount schemes depending on the partners' engagement and co-operation track record. Additionally DataWalk develops and offers a number of tools for supporting partners, such as training and e-learning courses, marketing materials and technical support in individual commercial cases.

IT system integrators

Thanks to offering a standard off-the-shelf product DataWalk may co-operate with IT system integrators to implement its system in high-stake contracts. Effectively DataWalk builds a network of proven partners (usually system integrators) who already have relationships with potential clients, like US Police Departments or federal and state agencies. This way clients may work with integrators they already know, and DataWalk does not have to start the relationship from scratch.

5.8. Risk factors

We perceive the following main risk factors at the current stage of DataWalk's development:

- **Funding risk.** We see it as the biggest source of risk. Due to the early development stage and its lack of positive operating profitability DataWalk's opportunities to raise external capital for funding its operations are limited. The lack of access to funding may exert a negative impact on the Company's activities, its development prospects and financial standing or financial results as well.

7 The Egmont Group is a united body of 159 Financial Intelligence Units (FIUs). FIUs are national centres which collect information on suspicious or unusual financial activity from the financial industry and other entities or professions required to report transactions suspicious of being money laundering or terrorism financing. FIUs are normally not law enforcement agencies.

- **Risk related to potential difficulties in recruiting new workforce in the US.** DataWalk intends to hire top professionals for DataWalk platform marketing, sales, implementation and maintenance in the US. The Company may face difficulties in recruiting specialists of adequate skills because of (i) low unemployment rate in the US, (ii) too excessive salary expectations, or (iii) possible perception of DataWalk as an unstable enterprise from the Central-Eastern Europe at the early stage of development.

- **Sale cycle risk.** Selling process of new technology (especially in the government sector) is burdened by the risk related to long lasting negotiation talks exceeding even 4 years. Over this long period of time, people responsible for the process may come and go which makes the selling process even longer.

- **Early stage of development risk.** DataWalk is a company at the early stage of development, with all the risks typical for every start-up in place. The Company estimates that – due to complexity of planned activities – time needed for a break-even may take 10-15 years starting from Jan. 2014. Over this long period the Company will bear a risk of unforeseen events and other risks which may lead to collapse of strategic projects and thus negatively affect the future financial and economic condition of the Company (including excessive growth of costs, technical or organizational problems, lack of the clients' interest in the Company's offer, lack of financial means for further development, etc.).

- **Competition risk.** DataWalk operates in the market niche where it competes with much bigger companies with an established market position (Palantir Technologies, IBM). Due to the relative immaturity of the sector where DataWalk operates, products may be subject to substantial and dynamic changes, so may the competition; new entities can enter the market offering products with better technology or more attractive prices.

- **Risk related to the loss of the management.** DataWalk's activities depend to a large extent on the know-how, skills, and market and business experience of key managers and senior officers and top specialists in programming, IT, logic, and applied math. Potential loss of key managers or senior officers, especially Mr Krystian Piećko who is the main creator of DataWalk platform, could adversely affect efficiency and agility of the Company's activity or its selected segments as well as the quality of services provided.

- **Liquidity loss risk.** Currently DataWalk does not generate revenues at the level sufficient to be able to cover operating costs; in consequence there seems to be a liquidity loss risk seen as a lack of sufficient financial means enabling the on-going operations. Until DataWalk reaches positive cash profitability, the Company will depend on external funding, including a share issuance.

6. Financial results and forecasts

- **We find up-to-date revenue dynamics of DataWalk not quite relevant for the Company's equity story.**
- **We assume that the Company will acquire a total of 30 customers till the end of 2022.**
- **The Company's business is based on human expertise, so the majority of costs is related to salaries.**
- **Profitability is not a goal (yet).**
- **DataWalk will probably organize two more funding rounds before achieving the business maturity (around 2022 and 2024).**

Revenues

We find up-to-date revenue dynamics of DataWalk not quite relevant for the Company's equity story. The Company has just approached the end of the second (out of five) stage of a technological start-up development and, so far, has been focusing on developing its technology (stage 1) and first implementations of the system (stage 2). Effectively, the scale of revenues was not the main concern. **In the upcoming third stage DataWalk will focus on obtaining the reference base of credible global customers and, in our view, this is when the revenue dynamics should soar and will start to truly matter.**

Pace of growth versus profitability

Our results' assumptions are based on the scenario which is optimal from the value creation point of view. As we see it, the optimal scenario encompasses dynamic growth of revenues at the cost of prolonged period of negative profitability and one or even two more funding rounds (apart from the current one). However, should the revenue dynamics fall below the 40-50% yoy threshold, the management may decide to alter the strategic goals and switch to organic growth focusing on profitability (versus growth) earlier in the development process. The value of required additional funding would be significantly decreased in this scenario.

Target: 20 world-class reference clients by 1H22-end

A mid-term goal of the Group is an **acquisition of c. 20 world-class reference clients** till 4Q21 – 1H22 (preferably from the US) using the DataWalk platform for the commercial purposes of their day-to-day business. These clients will serve as a global reference base, facilitating the future expansion. **Accounting also for additional clients we assume that the Company will acquire a total of 30 customers till the end of 2022.**

Pony versus elephant

DataWalk's strategy targets the market niche with the average single contract value of c. US$ 200,000 (**a 'pony' contract**). This way DataWalk fulfills a market niche located just below Palantir's targets (with respect to contract value). However, the Company will also acquire larger contracts with the average value of c. US$ 5,000,000 throughout five years (**an 'elephant' contract**). DataWalk assumes that the elephant contract will happen every five deals. Taking a conservative stance we assume 20-25% lower values of contracts than the Company's management (US$ 150,000 for the 'pony' and US$ 4,000,000 for the 'elephant' one).

***Land and Expand* in practice**

In the first deal the customer usually tests the DataWalk platform and then in the coming years the deal is expanded (additional users; additional processing powers). We assume that each of 30 deals signed till 2022 will be expanded in the consecutive two years according to the *Land and Expand* strategy. Later on only a 14-15% servicing fee will be due in the pony contract, while the elephant contract will be distributed evenly through five years (which is typical for large public deals) with the servicing fee later on.

In *Figures 19-20* we present the assumed distribution of the 'pony' and 'elephant' contracts within five years.

Fig. 19 Time distribution of contracts (US$)

	Year 1	Year 2	Year 3	Year 4	Year 5
'Pony' distribution	150,000	150,000	150,000	63,000	63,000
'Elephant' distribution	800,000	800,000	800,000	800,000	800,000
	1st deal	Land and expand		Service fee/ system upgrades	

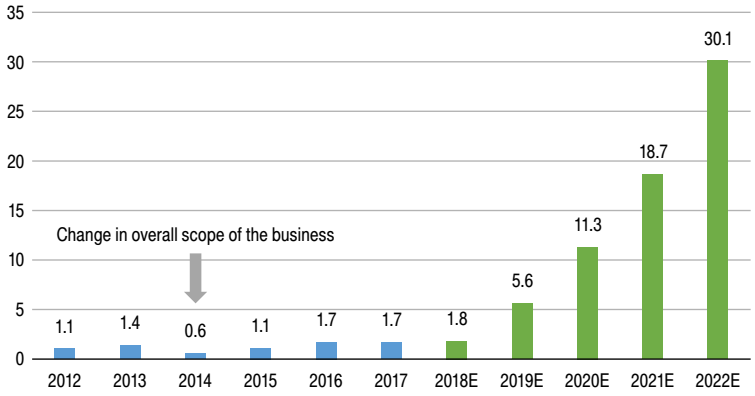
Source: Company, DM BOŚ

Fig. 20 Assumptions regarding the number of sales teams in the US and contract acquisitions

	2019E	2020E	2021E	2022E
# of sales teams in the US at the end of each year	2	4	6	9
# of deals acquired (US + Poland), incl.:	5	6	9	10
'Pony' contracts	4	5	8	7
'Elephant' contracts	1	1	1	3

Source: Company, DM BOŚ

Fig. 21 DataWalk's revenues (in PLN millions)

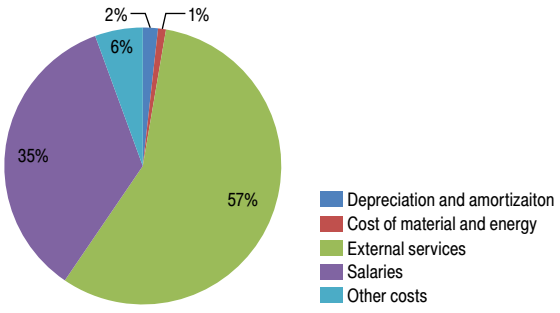


Source: Company, DM BOŚ estimates

Operating costs

The cost structure of DataWalk is dominated by: (i) external services (which is mainly the cost of b2b contracts) (57%) and (ii) salaries (35%) for the total value of PLN 10.8 million in 2017. The Company's business is based on human expertise, so the majority (92%) of costs is related to salaries. DataWalk currently employs 57 people, including 33 people employed under b2b contracts. B2B contracts are included in the cost of external services while full time jobs fall into the salaries category.

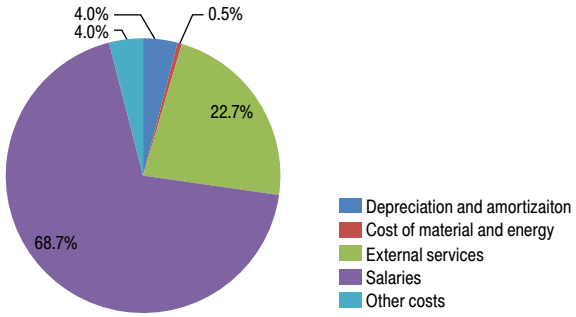
Fig. 22 DataWalk; Cost structure in 2017



Source: Company, DM BOŚ estimates.

We assume that the Company will employ nine sales teams (each composed of two people) in the US in 2019-2022. We estimate that the cost of one team should reach US$ 0.5 million per year. Moreover, we assume that the Polish employees base will increase by 12 people by the end of 2022. Effectively, we forecast that in 2022 the share of salaries and external services in the cost base will decrease to 91%. The total cost base will amount to PLN 38.7 million in 2022E.

Fig. 23 DataWalk; Forecasted cost structure in 2022



Source: Company, DM BOŚ estimates.

Expected government grants

In 2018-2022 the Company aims to obtain PLN 5 million from government grants related to innovation in technology.

Profitability is not a goal (yet)

Venture capitalists tend to prefer the revenues growth over profitability as long as the yoy revenues dynamics exceeds some 50% threshold. In theory a company should heavily invest in sales and marketing as long as the yoy revenues dynamics exceeds 50-70%, not minding the concurrent losses. We expect DataWalk to reach net profitability at the earliest at the last stage of business maturity (around 2024-2025).

Interestingly, when we browse the profitability levels of the US public Big Data companies, it appears that most of them are still under water in spite of their huge market caps.

Fig. 24 Public Big Data companies

	Market CAP (US$ m)	Revenues (US$ m)	Yoy sales growth (%)			Gross profit margin (%)			Net profit margin (%)		
Company	17.12.2018	2017	2016	2017	2018E	2016	2017	2018E	2016	2017	2018E
Alteryx	3,954	128.4	126%	49%	50%	81%	86%	89%	negative	negative	negative
Cloudera Inc	1,894	261.0	n.a.	57%	39%	60%	67%	58%	negative	negative	negative
Tableau Software	10,770	868.3	24%	8%	13%	90%	88%	87%	3%	2%	negative
Hortonworks	1,350	257.3	48%	42%	33%	62%	70%	75%	negative	negative	negative
MongoDB	4,855	101.4	60%	55%	52%	68%	71%	72%	negative	negative	negative
Talend SA	1,056	148.5	39%	40%	38%	76%	77%	77%	negative	negative	negative

Source: Bloomberg

Future funding

Product creation and its commercialization entails a multi-year, sometimes even a decade long, investment process. Hence DataWalk's activities can be regarded as a constant ongoing investment process. A cash flow break-even is usually achieved at the last stage of development, therefore the Company needs external funding for the whole process. **The timing of funding rounds usually goes in par with the achievement of consecutive milestones and advancement to another stage of development. DataWalk will probably organize two more funding rounds before achieving business maturity (around 2022 and 2024).**

7. Valuation

- **Valuation of companies at such an early stage of development is challenging due to: (i) insignificant scale of financial parameters for executing a peer-relative valuation, and (ii) lack of public data for peer companies which are usually non-public entities.**
- **We based our estimations on three methods: (i) MOIC, (ii) EV revenues multiple vs Palantir, and (iii) recent funding rounds valuation of DataWalk.**
- **We estimate the post-money valuation of DataWalk in the range of PLN 192 million – PLN 331 million.**

Multiple hardships to set up proper valuation framework

Valuation of companies at such an early stage of development is challenging. DataWalk has just proved the functionality of its platform and only few reference contracts have been signed and booked. Therefore the Company is on the eve of the dynamic growth of revenues. We believe that the valuation based on EV/sales multiples, with the revenues so modest, may be misleading and random.

Another problem is a lack of peer companies. Usually, firms at such an early stage of development as DataWalk are still private and their financial parameters are undisclosed. Therefore we have no credible data about their funding rounds, financials and multiples.

However, we managed to prepare a valuation framework which gives the investors several reference points helping to understand the value of DataWalk. We base our calculations on three methods:

- **Mutliple On Invested Capital (MOIC)**,
- **EV/revenues multiple vs Palantir at the similar stage of development**,
- **Recent funding rounds valuation**.

Multiple on Invested Capital

Multiple on Invested Capital (MOIC) tells us how much money the company has raised, and what implied post-money valuations were at the end of each funding round. MOIC is defined as "the implied post-money valuations divided by the amount raised to date". **Since, out of DataWalk's peers, we have the data for Palantir only, we will use Palantir's MOIC multiple applied by investors at the analogical funding round.**

In our view in 2006-2008 Palantir was at the similar stage of business development as DataWalk. The Company had proved the functionality of its platform and had already won the first government contract (with US Central Intelligence Agency in 2005). Just like DataWalk, Palantir was entering the third stage of start-up development focusing on the commercial implementation.

Fig. 25 *Palantir's funding rounds and MOIC*

Date	Amount (US$ m)	Amount raised to date (US$ m)	Post-money valuation (US$ m)	MOIC (x)
2006	0.1	0.1	7.0	49.1
2006	**10.8**	**11.0**	**35.0**	**3.2**
2008	45.4	56.4	400.0	7.1
2010	97.4	153.8	730.0	4.7
2011	162.0	315.8	1,200.0	3.8
2011	88.3	404.1	1,670.0	4.1
2012	178.1	582.1	2,500.0	4.3
2013	122.9	705.0	4,000.0	5.7
2013	150.0	855.0	4,930.0	5.8
2014	635.7	1,490.7	9,200.0	6.2
2015	400.0	1,890.7	15,350.0	8.1
2015	879.8	2,770.5	20,400.0	7.4
Median				5.7

Source: SharesPost, DM BOŚ SA estimates

Fig. 26 DataWalk funding rounds and post-money valuation based on MOIC

Date	Amount (PLN m)	Amount raised to date (PLN m)	Post-money valuation (PLN m)	MOIC (x)
October 2011	Undisclosed	–	Undisclosed	–
May 2012	0.30	0.30	2.8	9.3
September 2012	0.39	0.69	8.1	11.8
April 2013	1.50	2.19	16.2	7.4
February 2014	2.00	4.19	21.4	5.1
November 2014	3.08	7.27	28.1	3.9
April 2015	6.00	13.27	73.5	5.5
August 2015	21.15	34.42	135.2	3.9
November 2017	12.07	46.49	125.1	2.7
January 2019	**57.00**	**103.49**	**331.2**	**3.2**
Median				5.3

Source: Company, DM BOŚ

Essentially, the 2008 funding round of Palantir (7.1x MOIC) was the equivalent of 2019 funding round of DataWalk. However, taking a conservative approach, we decided to take Palantir's 2006 funding round MOIC multiple (3.2x) as the reference for DataWalk's current valuation in 2019. Applying 3.2x MOIC multiple to DataWalk's amount raised to date (PLN 103.49 million; assuming PLN 57 million proceedings from the current financing round) **we come out with the post-money valuation of DataWalk at PLN 331 million**.

Please notice that the applied 3.2x MOIC multiple is lower than median MOIC multiple for all Palantir's funding rounds (5.7x) and lower than median MOIC multiple for DataWalk's earlier funding rounds (5.3x).

EV/revenues multiple vs Palantir at a similar stage of development

First known bookings data of Palantir come from 2009 and amounted to US$ 22 million (Source: *SharePost*). However bookings are not the equivalent of revenues. According to *SharePost*, actual revenues are estimated to be between 20-35% of the bookings because Palantir is more of a service company than a product company. Therefore the bookings (backlog) may be distributed within three to five years. If we assume a conservative revenues/bookings factor of 35%, we come up at US$ 7.7 million revenues in 2009. This might have been the revenues amount taken into consideration by the investors participating in 2008 funding round of Palantir (an equivalent of 2019 funding round of DataWalk). Palantir's post-money valuation amounted to US$ 400 million back then, which implies EV/revenues multiple of 51.9x. **According to our estimates, DataWalk's revenues in 2019 may reach PLN 5.6 million, which implies a post-money valuation of PLN 292 million.**

Fig. 27 Palantir's funding rounds and implied EV/S

Date	Amount raised (US$ m)	Post-money valuation (US$ m)	Bookings (US$ m)	Revenues (estimated)* (US$ m)	Implied EV/revenues**
2006	0.1425	7	n.a.	n.a.	n.a.
2006	10.84	35	n.a.	n.a.	n.a.
2008	45.4	400	n.a.	n.a.	51.9
2009	-	-	22	7.7	-
2010	97.4	730	65	22.8	32.1
2011	162	1,200	100	35.0	34.3
2011	88.3	1,670	100	35.0	47.7
2012	178.06	2,500	250	87.5	28.6
2013	122.86	4,000	650	227.5	17.6
2013	150	4,930	650	227.5	21.7
2014	635.71	9,200	1,150	402.5	22.9
2015	400	15,350	1,750	612.5	25.1
2015	879.83	20,400	1,750	612.5	33.3
2016	-	-	2,500	875.0	-
2017	-	-	3,500	1,225.0	-

**based on 35% revenues/bookings factor*
*** for 2008 round, the EV/revenues calculated on the basis of 2009 revenues*
Source: SharesPost, DM BOŚ SA estimates

Fig. 28 DataWalk post-money valuation based on EV/revenues multiple of Palantir at the similar stage of development

2019 revenues forecast (DM BOŚ), (PLN m)	EV/revenues multiple (x)	Post-money valuation (PLN million)
5.6	51.9	292

Source: DM BOŚ SA estimates

Recent funding valuations

We believe that the recent funding rounds' valuations are the important guidance for the Company's value. DataWalk reached its highest post-money valuation in August 2015, with the value of the Company set at PLN 135.2 million and PLN 21.2 million raised. At that time the Company just changed its overall scope of business (to a vendor of enterprise IT products) and had not signed any production contract beforehand. The first contract (with State Treasury of Poland) did not appear until 15 months later in November 2016. At that stage DataWalk was much more risky company (with no production contracts signed whatsoever) than it is right now.

Since then DataWalk has (i) signed and implemented its first government contract with State Treasury, (ii) signed and implemented the first private contract in Poland (with Warta), proving the excellent effectiveness of its platform, as well as (iii) signed two contracts in the United States (with two federal law enforcement agencies). Effectively, the Company has already proved the efficiency of its solution in the production environment and started to build a reference base of customers on the most important US market.

It is quite obvious that the investment in DataWalk is currently less risky than it was back in August 2015. Therefore we do believe that the valuation of the Company should not fall below the post-money valuation from 2015 financing round (PLN 135 million) gross of the value of current funding round (PLN 57 million), which equals PLN 192 million.

To sum up

Given the three reference values indicated above, we estimate the post-money valuation of DataWalk in the range of PLN 192 million – PLN 331 million.

Fig. 29 DataWalk post-money valuation (PLN m)

Method	Post-money valuation
Multiple on Invested Capital	331
EV/revenues multiple vs Palantir at the similar stage of development	292
Recent funding valuations	192

Source: DM BOŚ SA estimates

8. Financial statements

Fig. 30 DataWalk; Balance sheet

(PLN m)	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Fixed assets	**0.6**	**0.8**	**0.7**	**0.9**	**2.1**	**3.2**	**3.9**	**4.2**	**4.3**	**4.5**	**4.7**
Intangible fixed assets	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Tangible fixed assets	0.5	0.8	0.6	0.7	1.5	2.6	3.6	3.8	4.0	4.1	4.3
LT receivables	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Financial assets	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Other fixed assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current assets	**0.9**	**0.8**	**3.2**	**23.7**	**15.1**	**17.5**	**5.2**	**51.2**	**39.9**	**29.9**	**22.0**
Inventory	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
Receivables	0.6	0.6	0.8	1.5	2.1	2.0	2.8	2.8	2.8	2.8	2.8
Cash and equivalents	0.2	0.2	2.3	13.0	5.2	4.8	1.6	47.6	36.4	26.3	18.5
Financial assets	0.0	0.0	0.0	9.2	7.6	10.0	0.0	0.0	0.0	0.0	0.0
Other current assets	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Total assets	**1.4**	**1.7**	**3.9**	**24.5**	**17.2**	**20.7**	**9.1**	**55.3**	**44.2**	**34.4**	**26.8**
Shareholders' funds	**1.2**	**1.4**	**3.3**	**23.7**	**16.2**	**18.8**	**7.3**	**53.5**	**42.5**	**32.6**	**25.0**
LT liabilities	**0.0**	**0.0**	**0.1**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
ST liabilities	**0.2**	**0.3**	**0.5**	**0.7**	**1.0**	**1.8**	**1.7**	**1.7**	**1.7**	**1.7**	**1.7**
Loans and other financial liablities	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Payables	0.1	0.1	0.2	0.4	0.5	1.1	1.2	1.2	1.2	1.2	1.2
Other liabilities	0.1	0.1	0.2	0.2	0.5	0.7	0.5	0.5	0.5	0.5	0.5
Total liabilities and equity	**1.4**	**1.7**	**3.9**	**24.5**	**17.2**	**20.7**	**9.1**	**55.3**	**44.2**	**34.4**	**26.8**

Source: Company, DM BOŚ SA estimates

Fig. 31 DataWalk; Income statement

(PLN m)	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Net sales	**1.1**	**1.4**	**0.6**	**1.1**	**1.7**	**1.7**	**1.8**	**5.6**	**11.3**	**18.7**	**30.1**
Operating costs, incl:	0.7	2.6	3.5	7.8	9.3	10.8	13.8	18.0	23.4	29.5	38.7
Amortization	0.0	0.1	0.3	0.2	0.2	0.2	0.2	0.9	1.0	1.2	1.6
Cost of material and energy	0.0	0.3	0.2	0.4	0.2	0.1	0.1	0.1	0.2	0.2	0.2
External services	0.4	1.0	1.4	4.5	5.8	6.1	7.1	7.4	7.8	8.3	8.8
Taxes and fees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salaries	0.1	0.7	1.1	1.8	2.7	3.8	5.1	8.3	13.0	18.3	26.6
Social securities and other	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other costs	0.1	0.5	0.5	0.6	0.4	0.6	1.3	1.3	1.4	1.5	1.5
Profit on sales	**0.3**	**-1.2**	**-2.9**	**-6.7**	**-7.5**	**-9.1**	**-12.0**	**-12.4**	**-12.1**	**-10.8**	**-8.6**
Other operating income	0.0	0.0	0.1	0.1	0.0	0.1	0.2	1.0	1.0	1.0	1.0
Other operating costs	0.0	0.1	0.2	0.1	0.4	10.1	2.8	2.8	0.0	0.0	0.0
EBITDA	**0.4**	**-1.1**	**-2.6**	**-6.4**	**-7.7**	**-18.8**	**-14.4**	**-13.3**	**-10.1**	**-8.6**	**-6.1**
EBIT	**0.3**	**-1.3**	**-2.9**	**-6.7**	**-7.9**	**-19.0**	**-14.6**	**-14.2**	**-11.1**	**-9.8**	**-7.6**
Financial income	0.0	0.0	0.0	0.1	0.4	0.2	0.2	0.0	0.0	0.0	0.0
Financial costs	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Pre-tax profit	**0.3**	**-1.3**	**-3.0**	**-6.6**	**-7.5**	**-19.1**	**-14.4**	**-14.2**	**-11.1**	**-9.8**	**-7.6**
Income tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit	**0.3**	**-1.3**	**-3.0**	**-6.6**	**-7.5**	**-19.1**	**-14.4**	**-14.2**	**-11.1**	**-9.8**	**-7.6**

Other operating costs encompass mainly the costs of motivation program.
Source: Company, DM BOŚ SA estimates

Fig. 32 DataWalk; Cash flow statement

(PLN m)	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Operating cash flow	**-0.3**	**-1.1**	**-2.7**	**-6.7**	**-8.2**	**-8.8**	**-12.1**	**-10.5**	**-10.1**	**-8.6**	**-6.1**
Net income	0.3	-1.3	-3.0	-6.6	-7.6	-9.3	-14.4	-14.2	-11.1	-9.8	-7.6
Depreciation	0.0	0.1	0.3	0.3	0.2	0.2	0.2	0.9	1.0	1.2	1.6
Change in working capital	-0.6	0.0	0.0	-0.4	-0.4	0.2	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	-0.5	0.1	2.1	2.8	0.0	0.0	0.0
Net funds from investing activities	**0.0**	**0.0**	**0.0**	**-0.6**	**-3.6**	**-8.4**	**8.8**	**-1.1**	**-1.2**	**-1.4**	**-1.8**
Capital expenditures	0.0	0.0	0.0	-0.4	-1.0	-1.2	-1.2	-1.1	-1.2	-1.4	-1.8
Other	0.0	0.0	0.0	-0.2	-2.5	-7.2	10.0	0.0	0.0	0.0	0.0
Net funds from financial activities	**0.0**	**0.0**	**4.9**	**26.9**	**-0.1**	**11.8**	**0.2**	**57.6**	**0.0**	**0.0**	**0.0**
Income from shares issue	0.0	0.0	4.9	27.0	0.0	11.9	0.0	57.6	0.0	0.0	0.0
Net change in debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividends paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.2	0.0	0.0	0.0	0.0
Change in cash	**-0.3**	**-1.1**	**2.1**	**19.6**	**-11.8**	**-5.3**	**-3.2**	**46.0**	**-11.2**	**-10.0**	**-7.8**

Source: Company, DM BOŚ SA estimates

Appendix 1

Specification of DataWalk platform

Key Specifications

System Architecture	• Shared multi-user system • Scalable, shared, single-instance, multi-node data repository • Two layers: UI and Computation Engine
Scalability	• Easily link dozens/hundreds of data sources • Interactive analysis of many millions/billons of records • Scale-out architecture: scale system capacity by adding commodity servers
Push-Button Analytics	• Instant Analyses enable you to encode organizational knowledge by easily generating and re-using searches and analysis paths on the Universe Viewer
Link Analysis	• Enables network analysis, geospatial, and temporal analysis (time series analysis) • Multiple layouts, including structural, radial, and hierarchical. • Social Network Analysis including betweenness, closeness, page rank, shortest path, and Eigenvector. • Save and retrieve link charts. • Undo/redo analysis steps on link charts as needed. • Easily visualize flows of any objects (e.g., money, material, etc.). • Links can optionally be directional • Preview object details
Maps	• Link charts and flows can be presented on maps • Heatmaps visualize most frequent locations of specified objects or events • Create and search a polygon on a map • Maps can be integrated with GoogleStreetView • Geolocation translation is available via LocationIQ or an offline service • DataWalk supports: – OpenStreetMap Server (such that no request is sent off premise) – MapQuest – GoogleMaps
Other Visualization and Analysis Capabilities	• Object search facility • Drill-down charts • Pivot tables – Universal OLAP • Multi-dimensional scoring • Ability to create custom calculated columns on tabular data • Basic statistics on tabular data (min, max, sum, avg) • Customizable dossiers show all desired data about an object, on a single screen (can be used as target packages)
Investigation Workspace	• Easily create Investigation Folders for DataWalk analyses and link charts associated with an investigation • Add ad-hoc notes • Attach any other files to an Investigation Folder • Specify colleagues with whom a Folder is to be privately shared • Folders marked if any updates since last open
Data Import/Export	• Your existing tools for ETL or data movement can drop data into • DataWalk drop folders, and that data is then imported into DataWalk. • Drag and drop CSV or Excel XLSX files onto the Universe Viewer, or upload via the RESTful API. • Share data and analyses with other tools via RESTful access, JDBC, and ODBC. • Export results to Microsoft Excel, including to Excel templates for report generation.
Data Sources	• Any relational Database • Microsoft Excel files • CSV files • Hadoop HDFS
Collaboration	• Single data instance shared by all users of the system • Easily share views, analyses, and investigation folders with colleagues who have appropriate permissions.
Security	• Highly granular (cell-level) rule-based permissions using predicates • Audit trail logs
Compliance	• 28-CFR Part 23 Compliance, i.e., data in DataWalk can be deleted on any desired schedule.
Alerts	• DataWalk can import alerts from an external alerting system, or alerts can be generated via the DataWalk alerting facility.
Reporting	• Automatic report generation • Reports can be exported to Microsoft Excel, including Excel-based templates • Reports can be automatically distributed on a pre-set schedule
Platform	• DataWalk runs on commodity servers in a scale-out configuration • Supported operating system platforms are RedHat7 and CentOS7

Supported Browsers	• DataWalk is browser-based and there are no client-side software installs required • Chrome C38+ (highly recommended; enables highest DataWalk performance) • Firefox 33+ and higher • Microsoft IE11 • Other browsers supported as required
Deployment	• Software-only solution runs on commodity hardware • One-click deployment of base DataWalk software • Can be deployed on-premise, or in cloud

Source: Company

BASIC DEFINITIONS

A/R turnover (in days) = 365/(sales/average A/R))
Inventory turnover (in days) = 365/(COGS/average inventory))
A/P turnover (in days) = 365/(COGS/average A/P))
Current ratio = ((current assets – ST deferred assets)/current liabilities)
Quick ratio = ((current assets – ST deferred assets – inventory)/current liabilities)
Interest coverage = (pre-tax profit before extraordinary items + interest payable/interest payable)
Gross margin = gross profit on sales/sales
EBITDA margin = EBITDA/sales
EBIT margin = EBIT/sales
Pre-tax margin = pre-tax profit/sales
Net margin = net profit/sales
ROE = net profit/average equity
ROA = (net income + interest payable)/average assets
EV = market capitalization + interest bearing debt – cash and equivalents
EPS = net profit/ no. of shares outstanding
CE = net profit + depreciation
Dividend yield (gross) = pre-tax DPS/stock market price
Cash sales = accrual sales corrected for the change in A/R
Cash operating expenses = accrual operating expenses corrected for the changes in inventories and A/P, depreciation, cash taxes and changes in the deferred taxes

DM BOŚ S.A. generally values the covered non bank companies via two methods: comparative method and DCF method (discounted cash flows). The advantage of the former is the fact that it incorporates the current market assessment of the value of the company's peers. The weakness of the comparative method is the risk that the valuation benchmark may be mispriced. The advantage of the DCF method is its independence from the current market valuation of the comparable companies. The weakness of this method is its high sensitivity to undertaken assumptions, especially those related to the residual value calculation. Please note that we also resort to other valuation techniques (e.g. NAV-, DDM- or SOTP-based), should it prove appropriate in a given case.

Banks

Net Interest Margin (NIM) = net interest income/average assets
NIM Adjusted = (net interest income adjusted for SWAPs)/average assets
Non interest income = fees&commissions + result on financial operations (trading gains) + FX gains
Interest Spread = (interest income/average interest earning assets)/ (interest cost/average interest bearing liabilities)
Cost/Income = (general costs + depreciation + other operating costs)/ (profit on banking activity + other operating income)
ROE = net profit/average equity
ROA = net income/average assets
Non performing loans (NPL) = loans in 'substandard', 'doubtful' and 'lost' categories
NPL coverrage ratio = loan loss provisions/NPL
Net provision charge = provisions created – provisions released

DM BOŚ S.A. generally values the covered banks via two methods: comparative method and fundamental target fair P/E and target fair P/BV multiples method. The advantage of the former is the fact that it incorporates the current market assessment of the value of the company's peers. The weakness of the comparative method is the risk that the valuation benchmark may be mispriced. The advantage of the fundamental target fair P/E and target fair P/BV multiples method is its independence of the current market valuation of the comparable companies. The weakness of this method is its high sensitivity to undertaken assumptions, especially those
related to the residual value calculation. Assumptions used in valuation can change, influencing thereby the level of the valuation. Among the most important assumptions are: GDP growth, forecasted level of inflation, changes in interest rates and currency prices, employment level and change in wages, demand on the analysed company products, raw material prices, competition, standing of the main customers and suppliers, legislation changes, etc. Changes in the environment of the analysed company are monitored by analysts involved in the preparation of the recommendation, estimated, incorporated in valuation and published in the recommendation whenever needed.

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Buy – fundamentally undervalued (upside to 12M EFV in excess of the cost of equity) + catalysts which should close the valuation gap identified;
Hold – either (i) fairly priced, or (ii) fundamentally undervalued/overvalued but lacks catalysts which could close the valuation gap;
Sell – fundamentally overvalued (12M EFV < current share price + 1-year cost of equity) + catalysts which should close the valuation gap identified.
This is a guide to expected relative price performance:
Overweight – expected to perform better than the benchmark (WIG) over the next quarter in relative terms
Neutral – expected to perform in line with the benchmark (WIG) over the next quarter in relative terms
Underweight – expected to perform worse than the benchmark (WIG) over the next quarter in relative terms

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Information sources: current reports, the Company's materials, issue prospectus, financial statements of DataWalk SA, WSE, and information services: ESPI, Notoria Services, PAP. DM BOŚ SA believes the aforementioned information sources to be reliable, however it does not guarantee their completeness.

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