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LeanIX Metrics - data is only valuable in the right context

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INTRODUCTION

"There was 5 exabytes of information created from the dawn of civilization through 2003, but that much information is now created every two days."

This 2010 quote by former Google CEO Eric Schmidt indicates the increased significance of data and information, which continues to grow. Modern IT organizations are at the center of this development. An immense number of expert tools generate a waterfall of data from the fields of development, operations and business.

The real task is to use this data in a meaningful way. As the challenges that IT organizations are facing are substantial. They can no longer limit themselves to simply keeping operations running. Internet giants such as Amazon, Apple, Google or Facebook spoil their customers with user-friendly services and products and have thus raised the bar high for all other companies in the digital age. The concept of big data represents a possible solution in this area—using data to gain a better understanding of the end-user in order to make better decisions. However, the results were often sobering. Dynamics and complexity in the application environment fueled by cloud computing and API transformed the usually vast information initiatives into a nightmare of complexity. As a result, silos of information sources without any real business reference are produced which are hardly useful for making decisions.

Enterprise Architecture (EA) is the discipline which generates precisely this business reference for IT-generated data. In the past, however, the statistical and often too abstracting nature of the results made them barely usable. The consolidation of Enterprise Architecture methods and real-time metrics thus offers a large opportunity to solve both specified sets of problems: placing data into the right context and bringing EA initiatives closer to the pulse of digital transformation.

BETTER DECISIONS WITH METRICS IN A BUSINESS CONTEXT—CASE STUDY

"74% of the companies surveyed indicate that there is no or hardly any integration between IT and business metrics."[1]

Imagine a renowned insurance company in the year 2016. Business has hardly changed throughout the years. But suddenly customers want to get in contact and interact with their insurance representatives via completely new channels. The still static company website becomes insufficient, mobile solutions must be provided and the application environment, grown over time, must be expanded with innovative cloud solutions.

Furthermore, the insurance provider appears to be confronted with a new kind of competitor for the first time. A great number of startups compete with their increasingly successful, innovative concepts and take a significant share of the market.

The challenge: creating business context for metrics

Confronted with these challenges, business managers recognize that they must react more flexibly to the dynamic behavior of customers. An information initiative is launched to use the data generated in the IT environment for better decision making. And there is no shortage of data.

A variety of expert tools generate a flood of data. The insurance company implements dozens of tools in the areas of business analytics, IT development and IT operations. Development tools, code management tools, data management software, service desk tools, performance management tools, logging tools, IT asset management tools and business intelligence tools generate information more and more rapidly.

However, this information is not very useful for business decisions. CRM solutions generate data structured according to customer accounts, development tools according to "user stories" and monitoring tools according to entities or servers. There is no context, no common denominator. Due to the sheer volume and speed with which the data is produced, business analysts are swamped with data and are unable to put it into a meaningful context for the decision makers. Moreover, several experts need to become involved for simple analyses. Consequently, analyses require long processing times for simple questions. Fast improvement cycles are thus impossible.

This problem does not just affect insurance companies. Gartner predicts: "In 2017, 90% of the information from big data initiatives will only be available in isolation and thus will not be usable."[2] In particular, such isolated flows of data can no longer satisfy the paradigm shift towards a continually more integrated model of "business," "development" and "operations," or "BizDevOps" for short.

Giant information projects often run out of steam

But what is the solution? Large-scale information initiatives were launched in the past with a lot of enthusiasm. But the giant programs eventually ran out of steam due to increasingly significant problems concerning inconsistent and redundant data, antiquated data warehouse systems and organizational trenches.

To avoid making the same mistakes, the insurance company establishes some framework conditions. The new data view should conform seamlessly to existing structures. Business capabilities and an application repository are already securely anchored in the reporting and organizational structure. Therefore, real-time data should be processed in this context.

A fast and iterative approach is the second important basic requirement. The resulting metrics must be easy to use for business analysts. For example, it must be possible to aggregate data to different time periods for every end-user. It must also be possible to add new reports quickly and without extensive expert knowledge. In the past, simple requirements quickly got out of hand and turned into long development projects.

Solution: Create a business context with Enterprise Architecture

The insurance provider has already focused on Enterprise Architecture (EA) as an important link between IT strategy, operations and development for several years. The team's self-image has rapidly transformed over the years. While they merely used to be modelers of the IT environment, today they ensure effective communication and information exchanges between different stakeholders.

Figure 1: A multitude of expert tools generate data that land in silos without context.

[2] Gartner (2014): Information Innovation Key Initiative

The leader of the EA team sees a major opportunity in the integration of real-time metrics into his existing EA information platform and reports to shape the digital transformation of the insurance provider more rapidly. He can now make future- and user-oriented suggestions for the first time: How does the new rate comparison on the website catch on with our customers? Which areas of our software for calculating individual policies are prone to error? Can the back-end manage twice as many users?

The Project Steering Committee decides to initially integrate the real-time data from three IT expert tools into the EA solution LeanIX, which has been successfully employed already: The login data of the recently updated mobile app is linked to the number of implemented features from the development tool Jira. The availability of the ten most important applications from the portfolio is visualized with up-to-date data from the monitoring tool Pingdom.

To gain a better understanding of the risks of obsolete interfaces, all transactions for each interface are represented in a metric each day.

With the help of LeanIX Metrics, data points can be easily displayed in various diagram models in the context of fact sheets. A variety of applications are possible due to the increasing popularity of APIs in modern IT organizations. The procedure is simple: The time periods are defined with the corresponding metric characteristic based on the data source. These are sent to LeanIX Metrics via the API. Every data point is marked in LeanIX to ensure that it appears in the right fact sheet. Representation of the data can be configured without programming work.
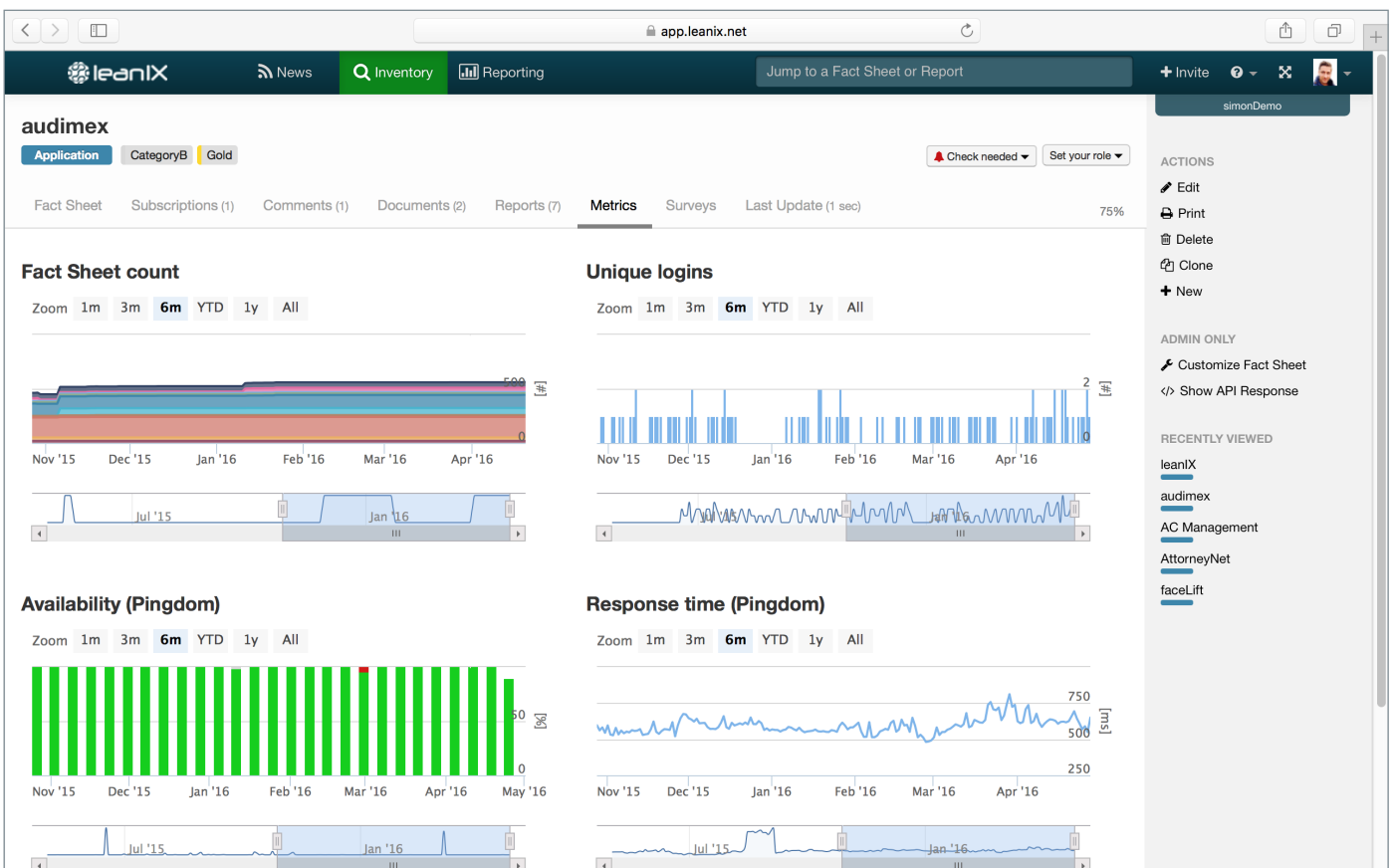

Figure 2: The application in the EA inventory is combined with real-time metrics.

Result: Real-time IT data enables better decisions

The piloted initiatives bring initial results quickly. Data for decision-making is now available without manual effort in the information platform. More metrics are iteratively added, discarded and further developed. Data and information now allow a dynamic development of the IT environment and no longer stand in the way. For the first time, the automatically collected data allows analysts to identify interrelations between business, users, development and operations.

Better and more reliable decisions with data

Much is already gained by effectively using and incorporating the currently available IT management data in daily decision-making. The insurance company's problem was not the lack of data. To the contrary, the sheer amount of data available was what made it so difficult to put it into a meaningful context. Information is made easily accessible with metrics in the context of the LeanIX EA platform—beyond functions, processes and organizational units. As a result, important decisions are now supported by real facts.

Iterative improvement and orientation to the future

The lean metrics setup allows for the quick integration of new data sources and the testing of various visualizations. As a result, improvements can be made quickly in short sprints based on the needs of the business. This facilitates a must-have capability in the digital age: Short improvement cycles based on real user feedback. Now data is no longer analyzed retrospectively, but available information is extrapolated into the future in real-time.

Use of existing structures

Since the EA repository already exists and is anchored in the organization, a new logic based on which the data is structured does not need to be developed. Similarly, all data sources are already available. Gathering existing data can be achieved much more quickly than developing and building up from scratch. This saves a lot of money in comparison to large business intelligence solutions.

Easy usability for analysts

IT data analysts are in the position to perform their evaluations quickly and without help from experts. Diagram types can be easily modified. Data can be aggregated arbitrarily and applied to various time intervals. As a result, dependencies, which lead to long response times for simple questions, disappear. Even the training effort is reduced due to the intuitive and modern user interface.

Merging of functions such as "Biz" "Dev" and "Ops"

Business models change in digital times. Insurance companies must react to new competitors, communicate with their customers via new channels and convert their data into cash. The integration and exchange of information are now core competencies. New operation models that bring together development and IT operations more closely, DevOps for short, require agile teams and therefore subsist on integrated and freely accessible information.

5 APPLICATIONS SOLVED WITH REAL-TIME METRICS

Understanding the availability of applications

It is important to continuously monitor the availability of websites and web-based applications in order to be able to solve problems quickly. Modern tools, such as Pingdom, test the availability of web applications with real-time inquiries every few minutes and facilitate quick trouble shooting if problems arise.

Modern monitoring tools and their functionalities are invaluable in daily IT operations. However, the data is naturally granular. Subpages and numerous entities must be monitored. In LeanIX Metrics, data points can be aggregated to a meaningful level for strategic decisions. This helps decision makers understand whether a specific application fulfills the SLA (Service Level Agreement), whether more revenue can be generated with higher availability or whether a communication measure for customers is necessary during malfunctions.

Understanding interface transaction volumes

In modern IT environments, interfaces play a continually larger role. They represent dependencies in the environment and can become a risk if many or very critical transactions are handled via an antiquated interface. Therefore, it is important for decision makers to obtain the following information: Which interfaces are critical? What happens if a critical interface malfunctions?

There are even special tools that can be used for this, such as AppDynamics. These tools detect and monitor transactions on the code level. An integration with LeanIX offers the advantage that information is put into a clear context. In order to make good decisions, the granular data must be linked to end-users and business implications. LeanIX enables one to easily understand the effects that the malfunctioning of a critical interface has on other applications, users and the business.

Measuring the use of applications

There is very little transparency on the use of supplied applications. How many end-users really use the 365 Degree HR Feedback Tool which costs 100,000 Euros in annual license fees? And how often do they use it? Can we switch to a cheaper license or are there any other tools available in the company with similar features?

In Metrics, this data can be transferred to the correct fact sheet, i.e., the appropriate application, via the API. As a result, decisions on the meaningful use or further development of an application can be made on the basis of real data.

Integrating customer service data

The web-based software Zendesk, in particular, has revolutionized the customer service of many companies. The software bundles all customer communications in one place. Thus all communications are managed from a single system independent of the channel of communication. The quality of customer service can be assessed and improved based on detailed figures and reports.

This is valuable information for managing the IT environment. As a result, applications can be expanded to provide information on the number of open tickets or average problem solving times. This helps draw conclusions on sensible ways to further develop an application and on whether improvements would result in better support figures.

Visualizing IT costs in a business context

Managing IT costs is a complicated topic for many businesses. It is quite often difficult to superimpose accounting & controlling perspectives on required decision-making perspectives. LeanIX offers a meaningful structure for decisions with applications that support business capabilities.

Many types of costs can be easily displayed for an application with the Metrics add-on. In this way, license costs, for example, can be visualized for an application without needing to wait for IT controlling assessments.

Business	Financial	Website	Analytics	CRM	Custom
	SAP	Google Analytics	COGNOS	salesforce	SDK

Development	Development	Code	Data	Events	Custom
	JIRA	github SOCIAL CODING	elastic	splunk>	SDK

Operations	Service Desk	Performance	Configuration	Logging	Custom
	zendesk	AppDynamics	servicenow	logentries	SDK

Figure 3: Overview of selected LeanIX Metrics applications

JUST GET STARTED AND ITERATE QUICKLY

Quick results are a critical success factor for every information initiative. The starting point is therefore an obvious business problem that can be solved by new or better data. For example, businesses have to understand which financial effects, such as lost sales, result from a system failure. Only then it can be determined, based on the data available, how much effort should be spent on preventing malfunctions.

The integration of data from various expert tools in LeanIX is easy and does not require in-depth expert knowledge.

Transferring data to LeanIX Metrics via the API

All development resources for LeanIX Metrics are freely available. The code example shows the basic principle. A new data point is set up for a "measurement," e.g. CPU. This data point has a time reference, e.g. 2016-04-22 23:30. A field indicates the characteristic of the data point, e.g. the CPU "load." The fields are clearly assigned to a specific fact sheet in LeanIX, e.g., to an application, over the course of a day. The data points are transferred to Metrics via the LeanIX API.

```
1      // Create a point
2      Point p1 = new Point();
3      p1.setMeasurement("CPU");
4      p1.setWorkspaceId(workspaceId);
5
6      // Add a field
7      Field f1 = new Field();
8      f1.setK("load");
9      f1.setV(osBean.getSystemLoadAverage());
10
11     // Add a tag
12     Tag t1 = new Tag();
13     t1.setK("factSheetId");
14     t1.setV("100000002");
15
16     p1.getTags().add(t1);
17     p1.getFields().add(f1);
18
19     // Push to leanIX metrics service
20
21     pointsApi.createPoint(p1);
```

Figure 4: Exemplary code snippet which shows how data points are transferred to LeanIX Metrics

Configuring diagrams

Diagrams can be configured in the LeanIX Admin section without requiring programming expertise from the end-user. Metrics can be allocated via rules to specific fact sheet IDs or fact sheet types. Based on the type of data, a suitable diagram type can be selected and parameters such as chronological aggregation or colors can be adjusted as desired.
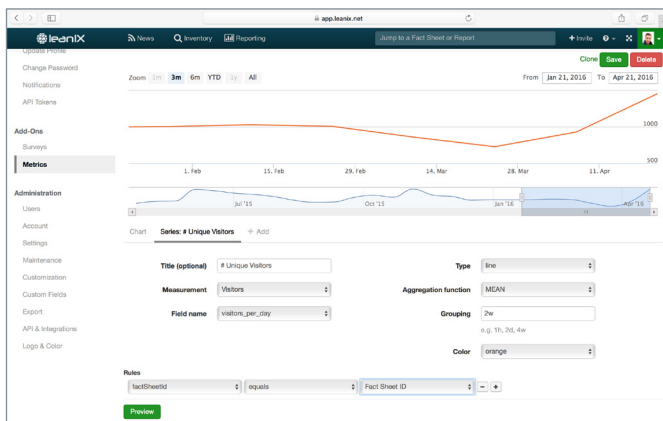

Figure 5: Configuration of the metric diagram

Displaying Diagrams on Fact Sheets or under Reporting

The view of the metrics can again be adjusted on the respective fact sheet. Thus it can be determined whether diagrams are displayed side by side or on top of each other. Furthermore, the end-user can aggregate the time data at will via the scroll bar.

Specific metrics not only refer to a fact sheet, but also apply to an entire fact sheet type, for example. These metrics can be conveniently displayed in the reporting section.

Fast iterations can be performed with the use of existing data sources and easy integration in LeanIX Metrics.
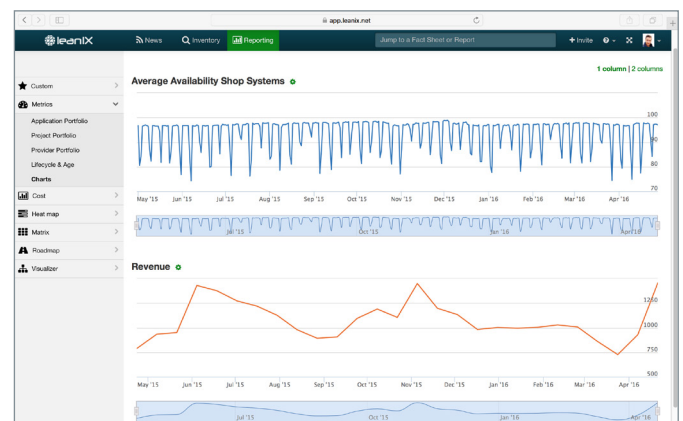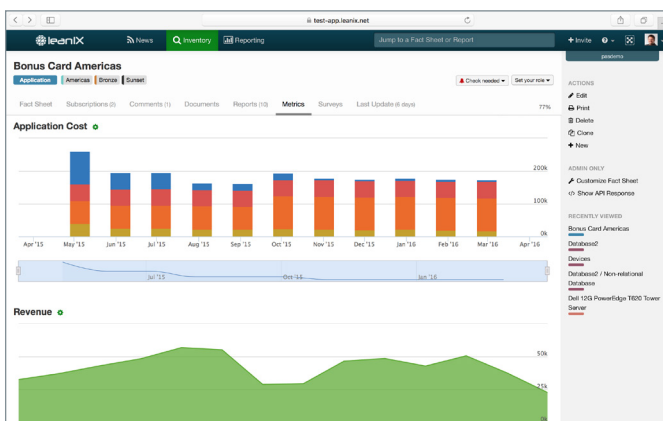

Figure 6: LeanIX Metrics can be displayed on individual fact sheets or comprehensively in reporting.

![leanIX logo]

SUMMARY

A multitude of expert tools generate a flood of data in companies which lands in isolated data silos. Making this data useful is a critical skill for making faster and better decisions in a digital age. LeanIX Metrics combines real-time data with the existing Enterprise Architecture Repository and puts it into a meaningful context.

New metrics can be created easily by the companies themselves. As a result, many applications can be quickly implemented—from the monitoring of application availability to IT cost management.

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About LeanIX

LeanIX offers a Software-as-a-Service (SaaS) for Enterprise Architecture (EA), which enables organizations to take faster, data-driven decisions for their IT landscape. More than 80 leading brands such as adidas, DHL, Merck, Vodafone, and Zalando use the innovative solution worldwide. Users of LeanIX gain insights on how to organize and leverage their IT landscape to increase competitiveness and enable innovation going forward. LeanIX addresses the frequent problem that the required information about the IT landscape is missing, outdated, or difficult to analyze. Use cases include application rationalization, technology risk management, and the shift from monolithic architectures to microservices. LeanIX was founded in 2012 by Jörg Beyer and André Christ. The company's headquarter is in Bonn, Germany, with offices in Boston, Massachusetts, and Houston, Texas. A wide network of partners provides support in America, Europe, and Australia.

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