

Create impact at scale by data-driven applications

创造数据产品, 驱动商业价值



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Sr. Manager, Business
Analytics and Data
science

QCon

2016.10.20~22

上海·宝华万豪酒店

全球软件开发大会 2016

[上海站]



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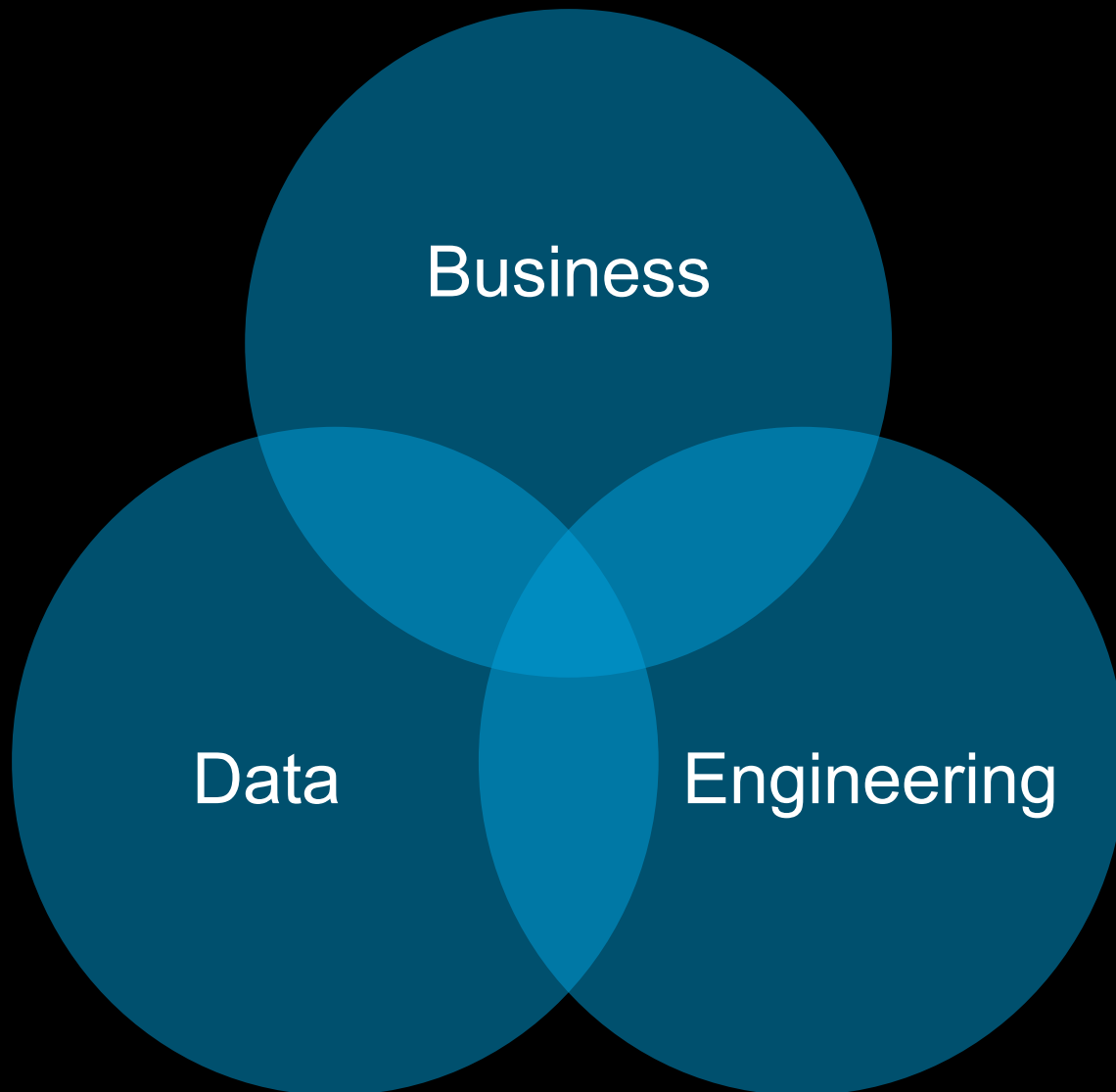
议题提交: speakers@cn.infoq.com

在线咨询 (QQ): 1173834688

团 · 购 · 享 · 受 · 更 · 多 · 优 · 惠

7折

优惠 (截至06月21日)
现在报名, 立省2040元/张



Business

Data

Engineering



Our vision

Create economic opportunity
for every member of the
global workforce

为全球职场人员提供发展机会



The Economic Graph 经济图谱



Members

用户



companies

公司



jobs

职位



skills

技能



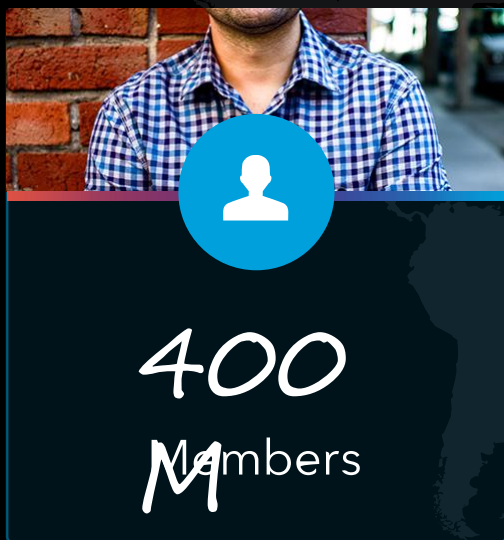
schools

学校

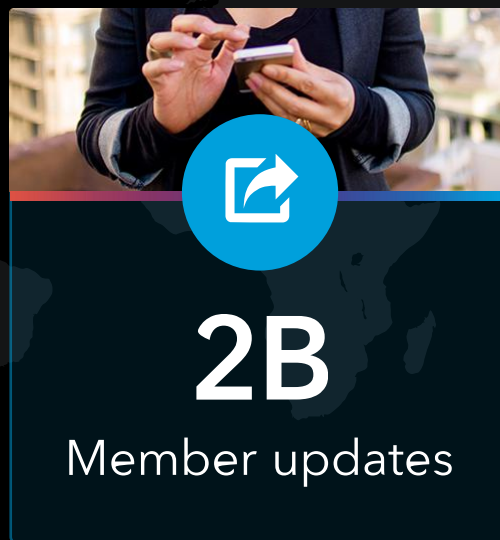


knowledge

知识



4亿注册用户



每周20亿用户更新



数十亿用户人脉

Member value propositions

为用户提供的价值



CONNECT

with your
professional world

建立职场人脉



STAY INFORMED

through professional
news and knowledge

同步职场知识



GET HIRED

and build
your career

把握职场机遇

Customer value propositions

为客户提供的价值



HIRE

招聘解决方案



MARKET

市场解决方案



SELL

销售解决方案

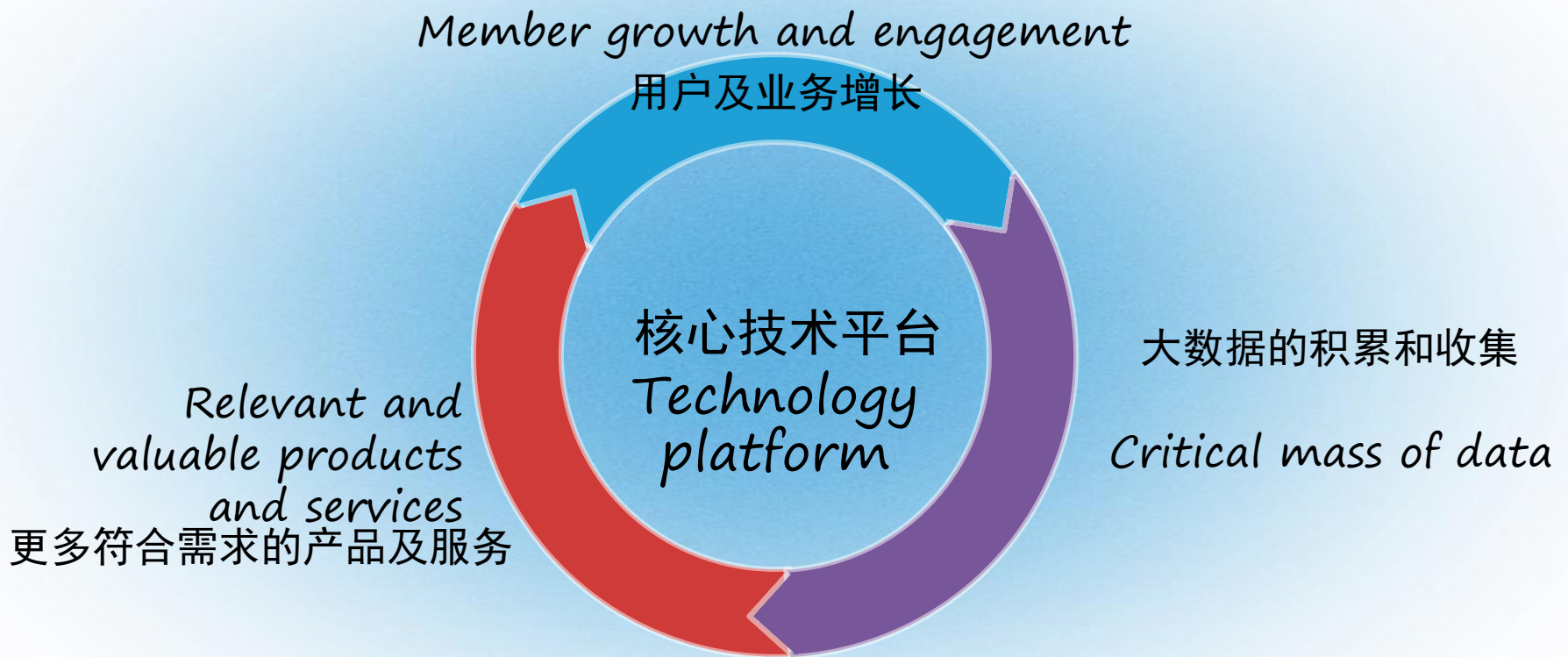


Learn

学习解决方案

LinkedIn's business model & why Data is important

LinkedIn的商业模式以及数据的重要性

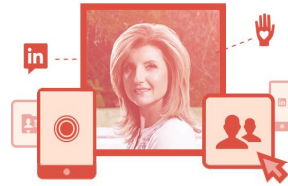


三种主要的数据类型

用户身份



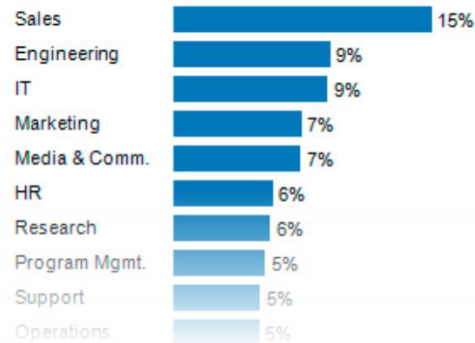
用户行为



社交数据

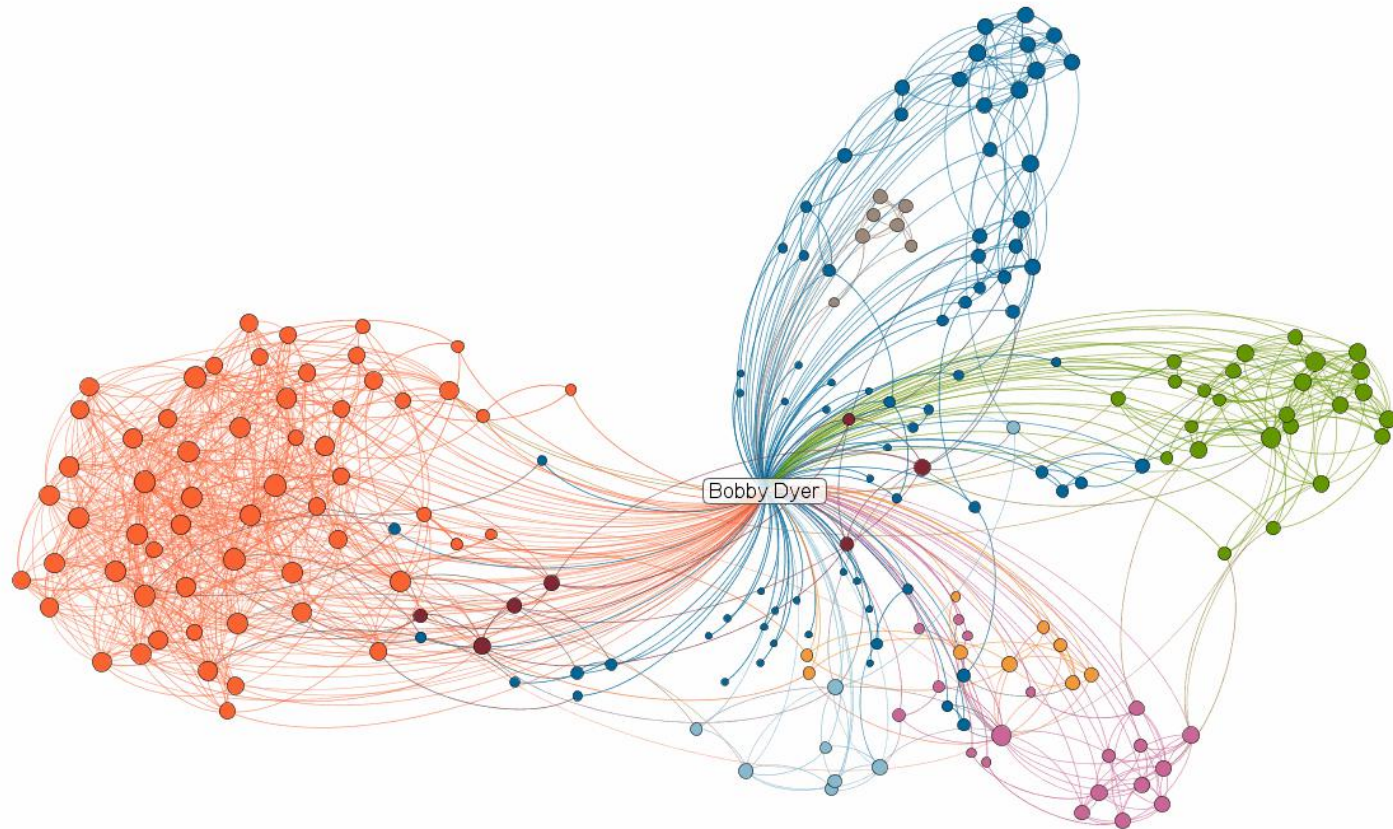


Visitors By Function (Top 15 Functions)



LinkedIn 社交关系图谱

LinkedIn Maps Bobby Dyer's Professional Network
as of January 25, 2011



Industry Trend

EMPLOYMENT TRENDS

+5.5%

Employment of *Internet industry* professionals in The United States grew by +5.5% over the past year

LinkedIn Industry Talent Report

- With more than 400M+ members in over 200 countries/territories, LinkedIn has the ability to analyze professional movement. This report shows you the macro-trends within an industry through the lens of LinkedIn data.
- We hope these insights help to inform your data-driven hiring & planning decisions. You can use this report to stay up-to-date on what movement looks like within a specific industry and how to engage these professionals.

EMPLOYMENT GROWTH IN THE UNITED STATES top regional growth in the *Internet industry*

- 1 Seattle, WA +27%
- 2 San Francisco Bay, CA +21%
- 3 Austin, TX +17%
- 4 New York City, NY +9.6%
- 5 Denver, CO +7.6%
- 6 Boston, MA +6.2%
- 7 Indianapolis, IN +5.5%
- 8 Phoenix, AZ +5.4%
- 9 Charleston, SC +5.3%
- 10 Chicago, IL +5.1%



● positive growth

Talent Intelligence



Overview

61.2K

Professionals on LinkedIn

3.3K

Graduates joined workforce (past 3 years)

25%

Are managers or above

19%

Changed jobs over the past year

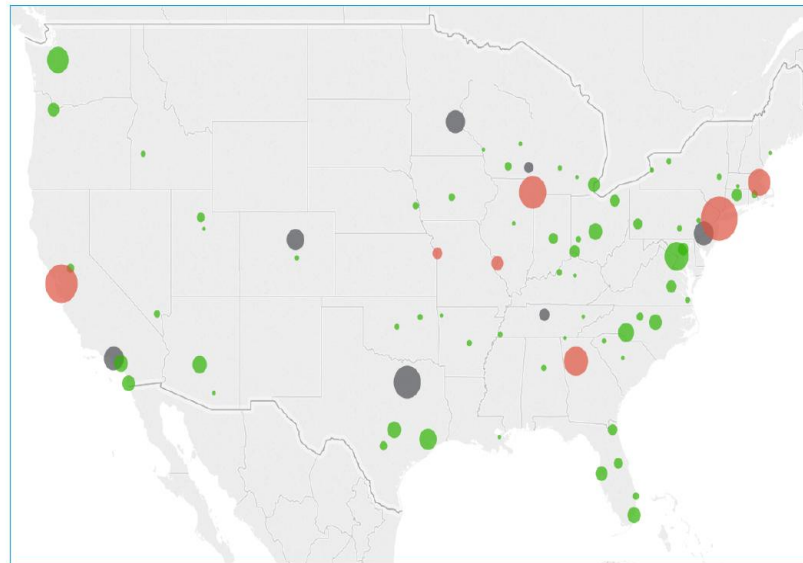
(Compared to 7% in the United States overall)



Methodology



Talent Supply & Demand by Region



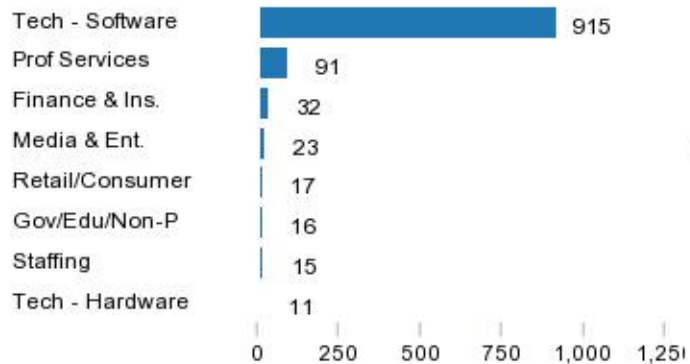
Metro Area	# of Professionals	Competition for talent
New York City, NY	6.4K	High
San Francisco Bay Area, CA	4.9K	High
Dallas/Fort Worth, TX	3.5K	Moderate

Hiring and Talent

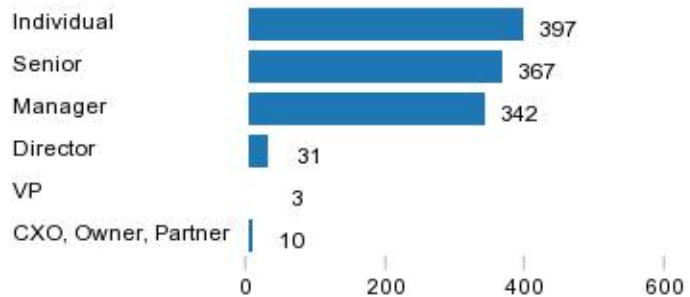
Number of New Hires of LI Members (Last 12M)

1,150

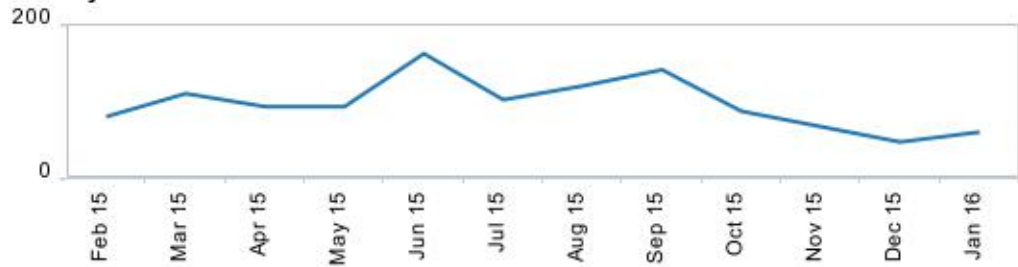
Hires by Industry Top 8 Industries



Hires by Seniority



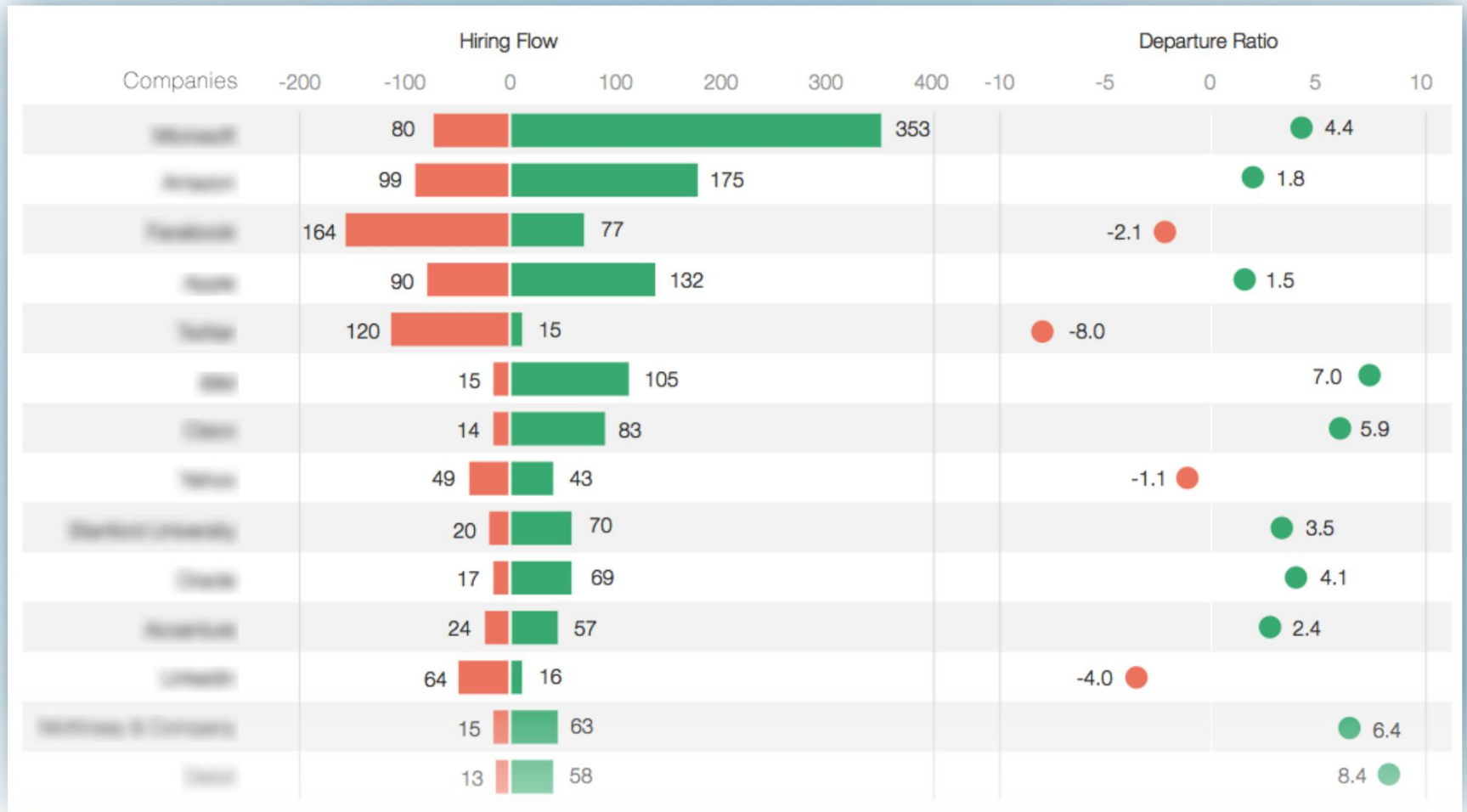
Hires by Month



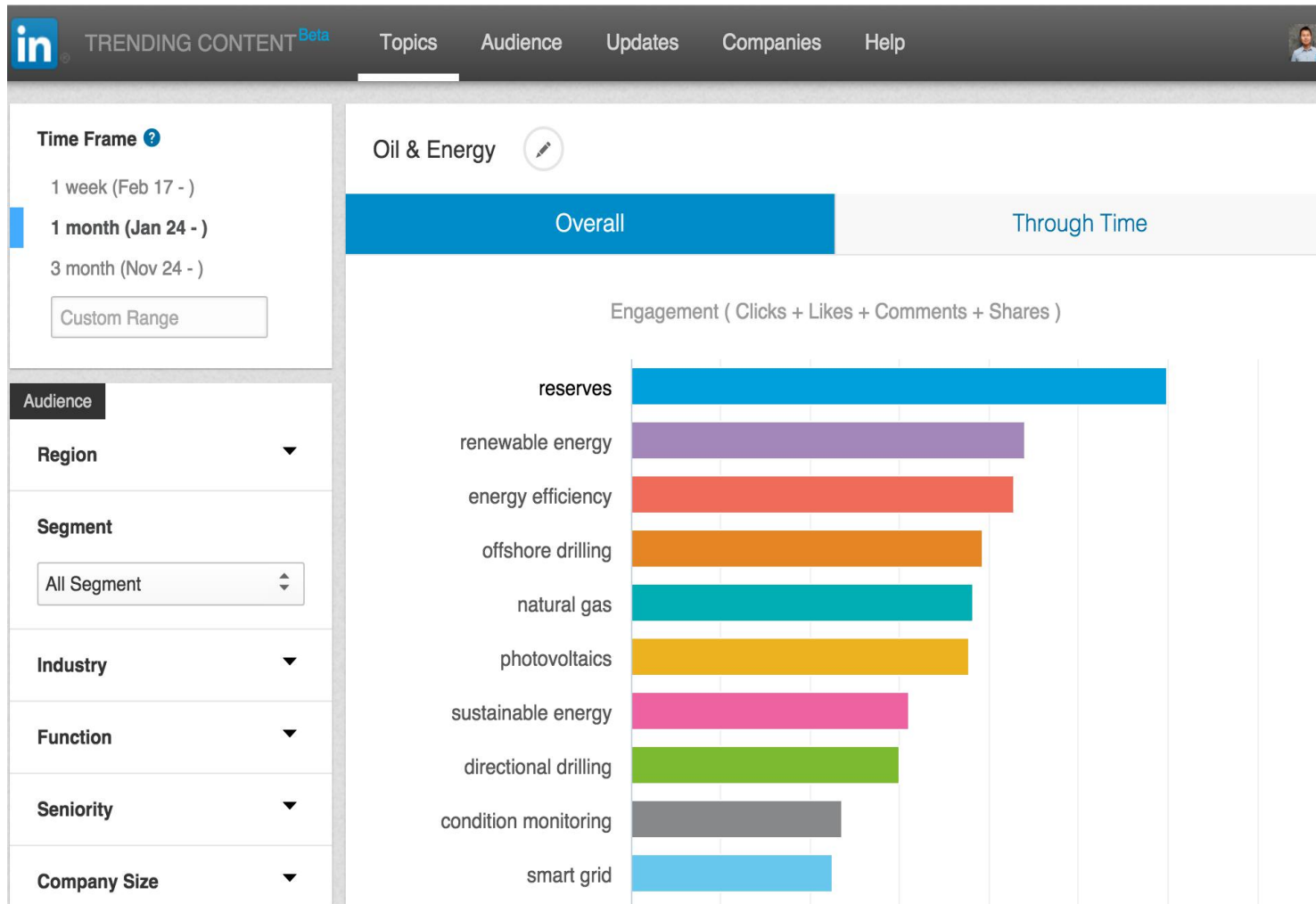
Hires by Country



LinkedIn 人才流动与公司品牌



Trending Content



Full-funnel Sales Intelligence: From Lead to Renewal

Which company?

Who to contact?

Which Sales Person?

What is the story?



Preventing churn is critical to sustainable business





Churn Guard reduce customer churn in 3 steps

Step

Description

1

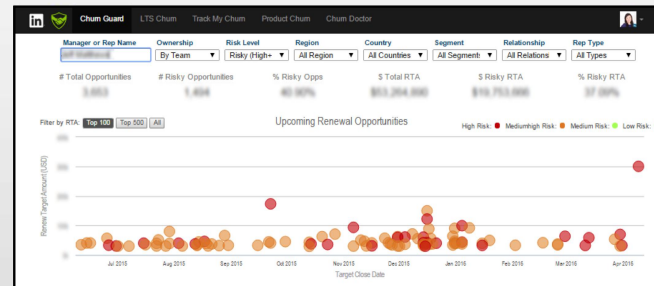
Measure

Churn Rate Overview										
Rep Region	RegSegment	11	2013M12	2014M01	2014M02	2014M03	2014M04	2014M05	2014M06	2014M07
China	ENT		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SMB		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Staffing		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corp-GAM	GAM-APAC	%	11.1%	14.3%	14.3%	0.0%	7.1%	7.1%	0.0%	7.1%
	GAM-EMEA	%	11.1%	11.1%	10.0%	14.3%	10.0%	10.0%	10.0%	10.0%
	GAM-LATAM	%	11.1%	14.3%	0.0%	0.0%	10.0%	10.0%	10.0%	10.0%
	GAM-NAMER	%	7.0%	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%
	Total	%	0.0%	7.1%	7.1%	7.1%	0.0%	10.0%	10.0%	10.0%
EMEA	ENT	%	11.1%	14.3%	11.1%	11.1%	11.1%	11.1%	10.0%	11.1%
	SMB	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

- Measure and track performance

2

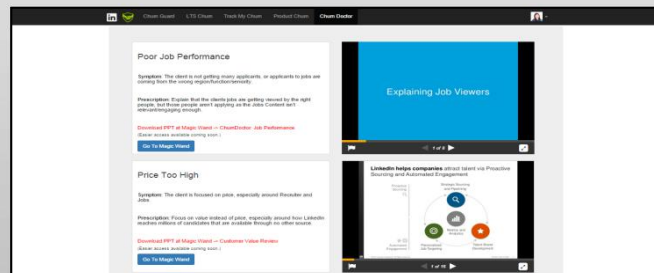
Predict



- Predict up-coming risks with machine learning

3

Prevent



- Prevent churn with prescribed actions

1

Measure: accurately measure churn at region, segment, team & individual level

- Region and segment level churn measurement help leadership understand churn baseline

LTS Quarterly Churn Rate													
Region	Segment	2013Q1	2013Q2	2013Q3	2013Q4	2014Q1	2014Q2	2014Q3	2014Q4	2015Q1	2015Q2	2015Q3	2015Q4
Corp-GAM	GAM	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
China	China	0.7%				0.7%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.7%				0.7%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
APAC	ENT	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	SMB	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Staffing	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
EMEA	ENT	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	SMB	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Staffing	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
LATAM	ENT	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	SMB	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Staffing	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
NAMER	ENT	0.7%	0.8%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	SMB	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Staffing	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
	Total	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%
Grand Total		0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%

- Rep and manager level view establish accountability

Churn Guard

LTS Churn

Track My Churn

Leaderboards

Product Churn

Churn Doctor

Name

Account

Quarter

Region

Country

Segment

Relationship

John Smith

Search Account

2015Q2

All Region

All Countries

All Segments

All Relations

\$ RTA

\$ Closed Amt(\$)

\$ Churn(\$)

\$ Bleed(\$)

% Churn Attainment

\$1,214,187

\$876,677

\$86,627

\$0

1.82%

Rep Name

Manager

Region

Country

Level

SF Account

Month

Quarter

RTA(\$)

Closed Amt(\$)

Adj. Amt

John Smith

John Smith

NAMER

US

RM4

Search Account

Jan 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

Feb 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

Mar 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

Apr 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

May 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

Jun 2015

2015Q1

\$1,214,187

\$876,677

\$86,627

John Smith

John Smith

NAMER

US

RM4

Search Account

Jul 2015

2015Q1

\$1,214,187

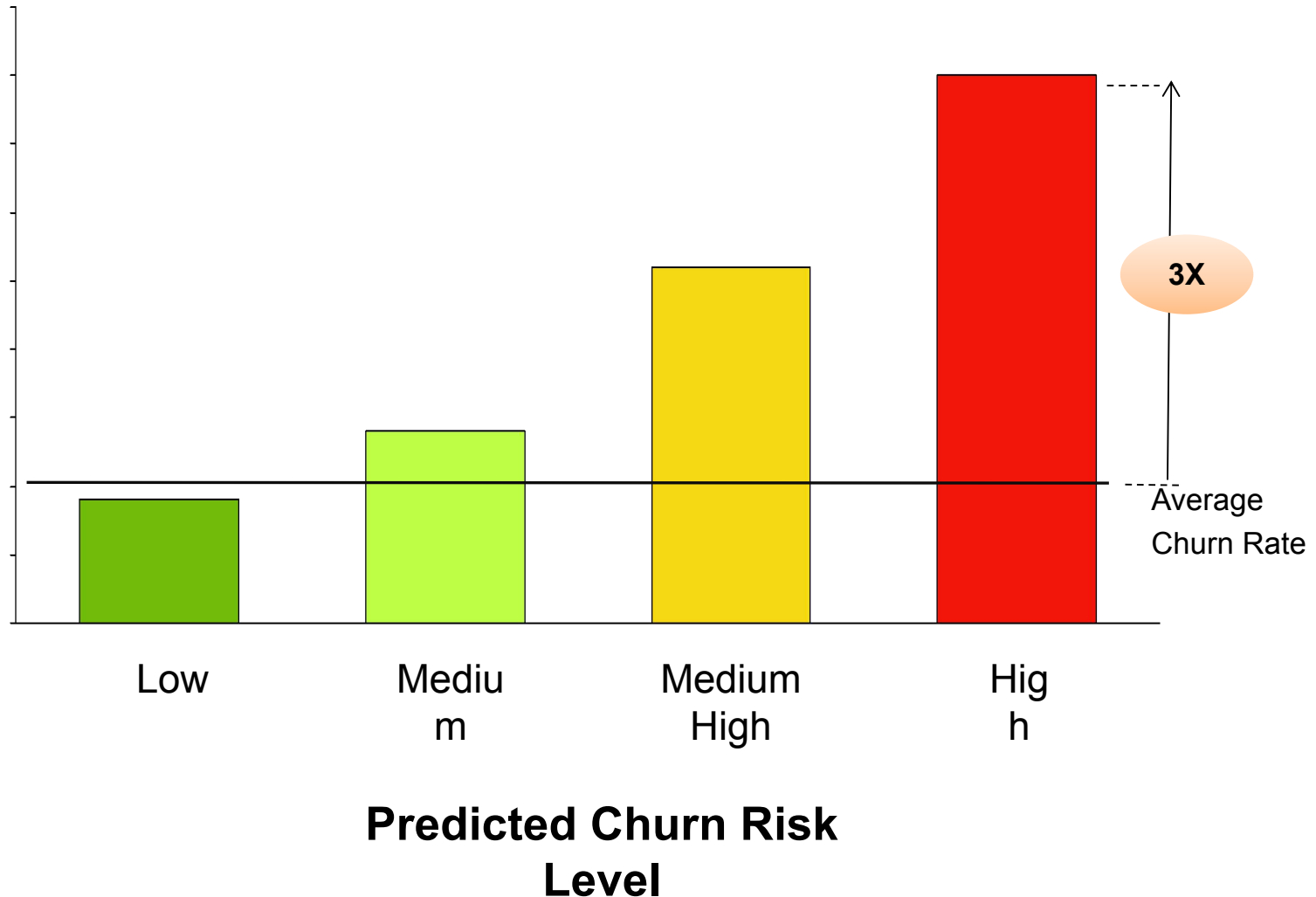
\$876,677

\$86,627

2

Predict: machine learning models predict accounts at risk of churning

Churn Rate



3

Prevent: a narrative is prescribed to mitigate each type of risk

The screenshot shows a LinkedIn Churn Doctor presentation interface. The top navigation bar includes links for Churn Guard, LTS Churn, Track My Churn, Leaderboards, Product Churn, and Churn Doctor. The main content area is divided into two columns. The left column contains two blurred text blocks, each followed by a red link 'Download PPT at Magic Wand -> ChurnDoctor: [Topic]' and a blue button 'Go To Magic Wand'. The right column displays two slides from a presentation. The top slide is titled 'LinkedIn Churn Doctor WWU First Impact' and the bottom slide is titled 'Explaining Job Viewers'. Both slides have a blue background and a black navigation bar at the bottom with a '1 of X' indicator and a share icon.

LinkedIn Churn Doctor

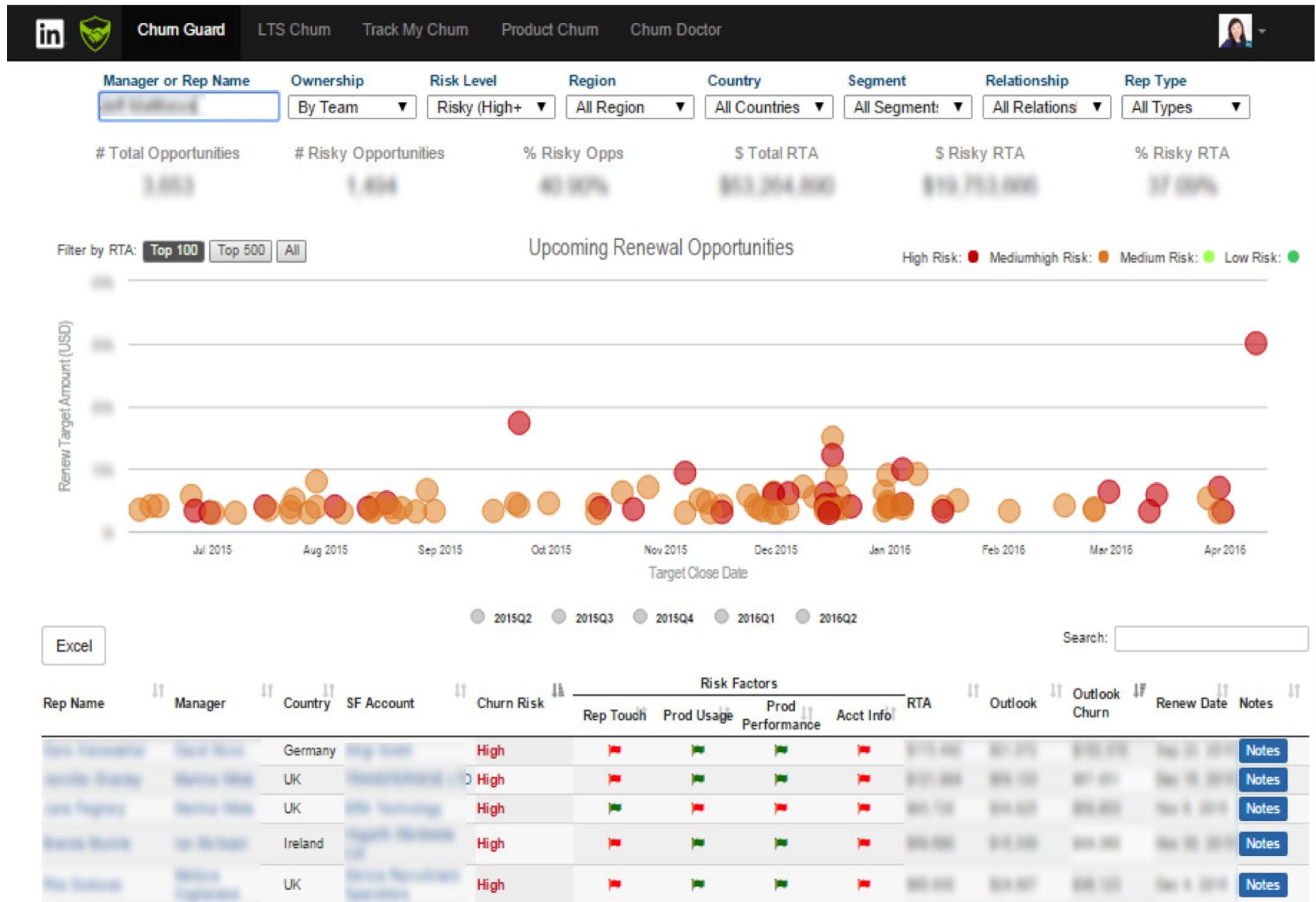
Churn Doctor
WWU First Impact

1 of 5

Explaining Job Viewers

1 of 8

Scale it with Churn Guard



Architecture Components

Scalable

Data Systems

Kafka, Hadoop, Teradata

....

Easy to use

Visualization Platform

Highchart, Tableau

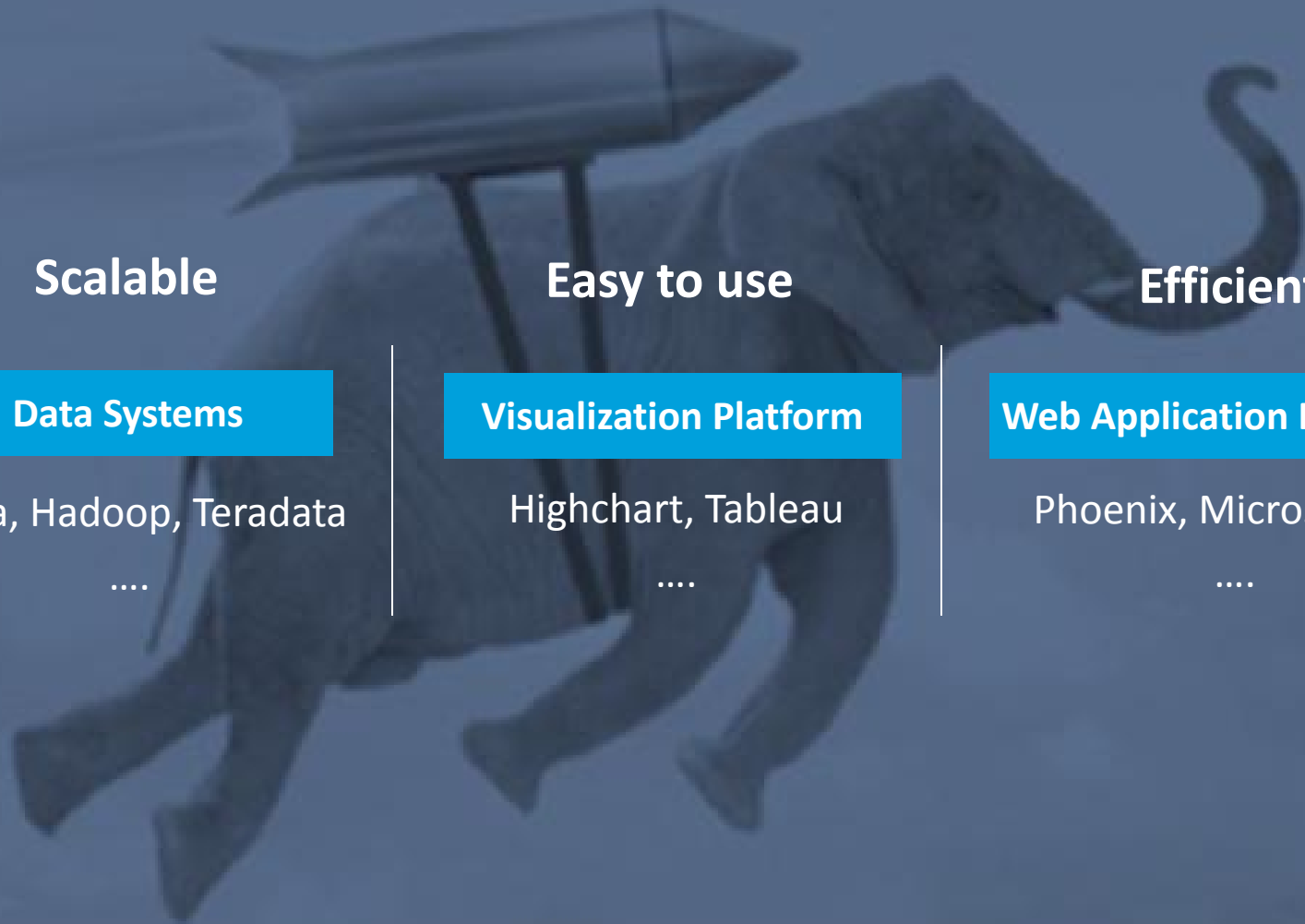
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Efficient

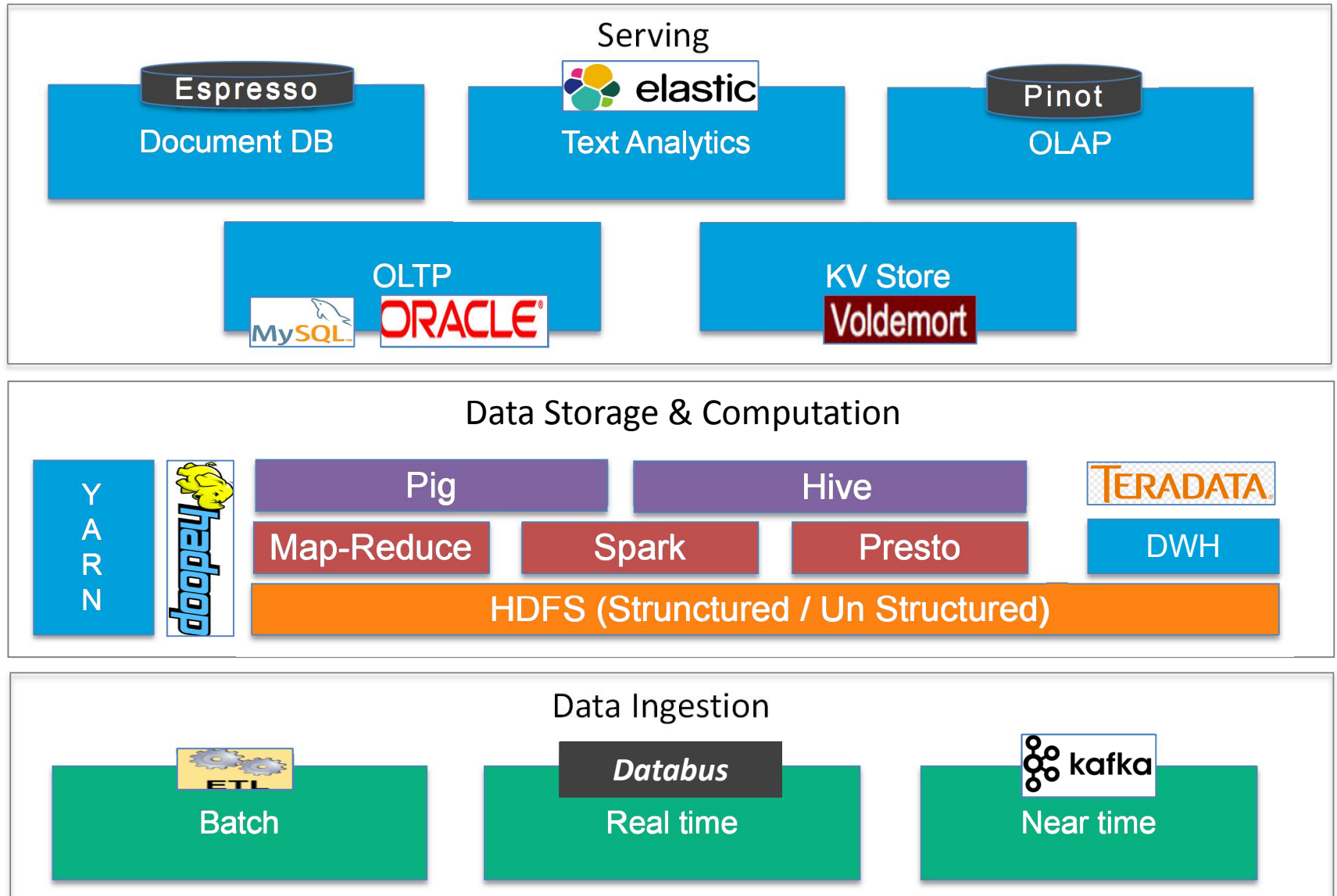
Web Application Framework

Phoenix, Microservices

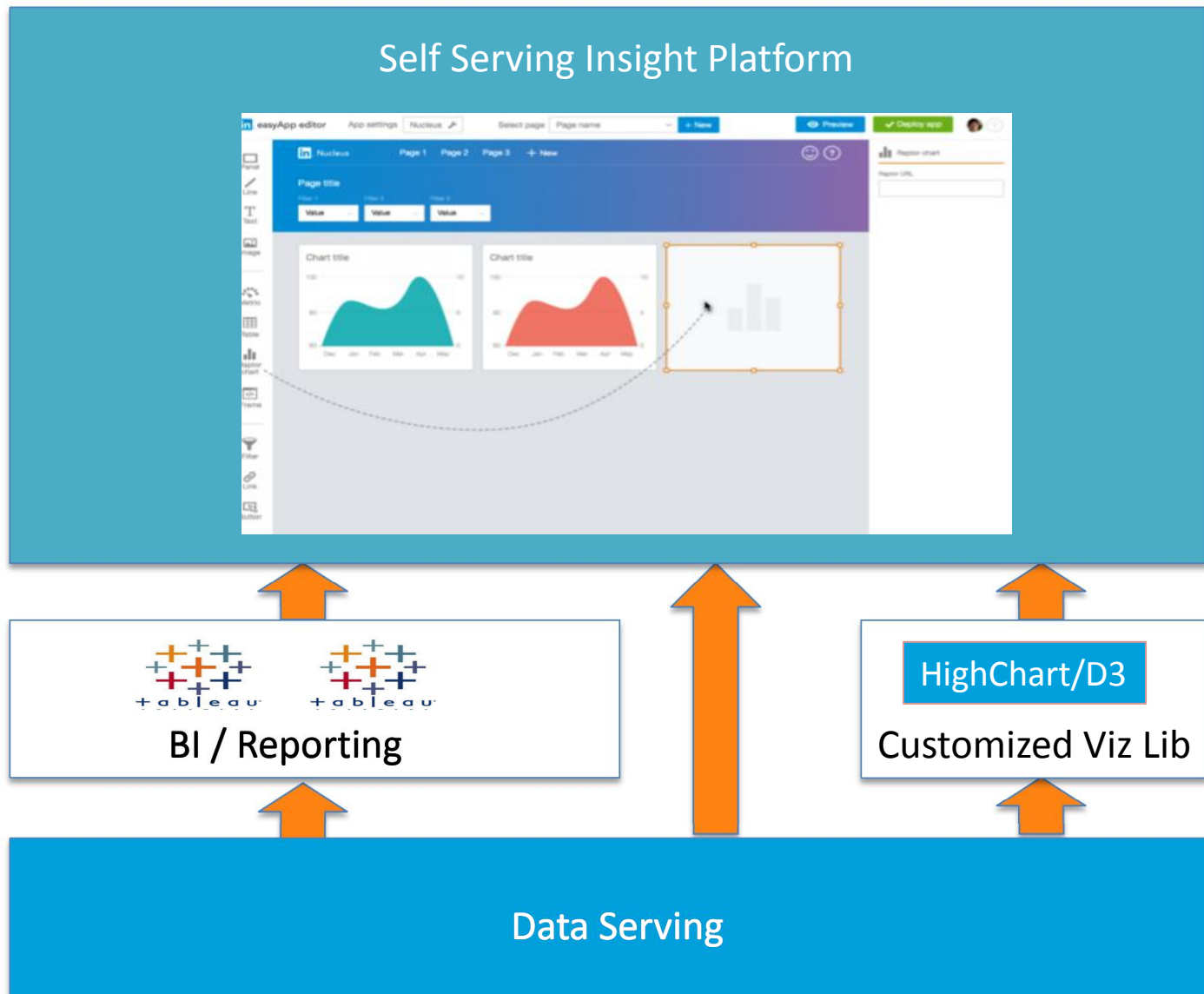
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Data Systems



Data Visualization Platform



Web Application Architecture

