



# Wandel im Unternehmen durch BigData



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# Agenda

**IT Heute...**

**Big Data**

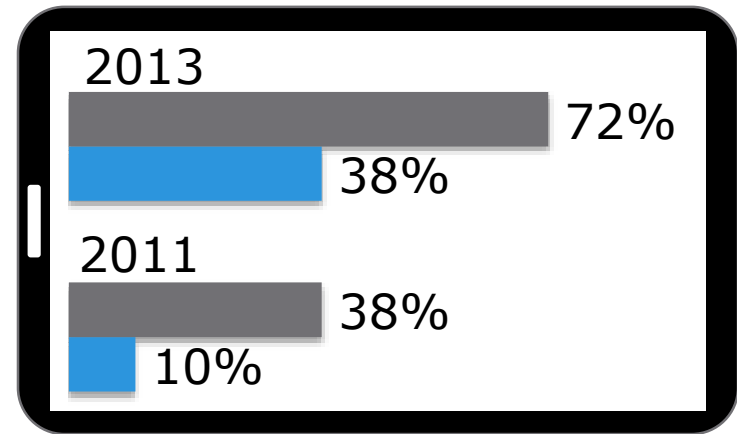
**EMC Corporation**



# IT ist ein Kinderspiel...



Nutzung mobiler Devices bei **0-8** Jährigen hat sich fast verdoppelt,



bei **0-2** Jährigen hat sie sich annähernd vervierfacht!\*

\*Studie Children's media use in America 2013, von Common Sense Media

# The Rise of the Software Defined Enterprise!



More CEOs See  
IT As Driver Of  
Digital Business  
Innovation  
And Growth

IT “has the highest  
business priority in more  
than a decade... Revenue  
generation tops 5-yr tech-  
related investment agenda...  
Some fear being left behind.”

– Gartner



# Einige haben ihr Geschäft "Re-Defined"

axel springer 



SAMSUNG

Beiersdorf

# IT bisher



**Infrastruktur & Anwendungen  
designed für eine andere Ära**

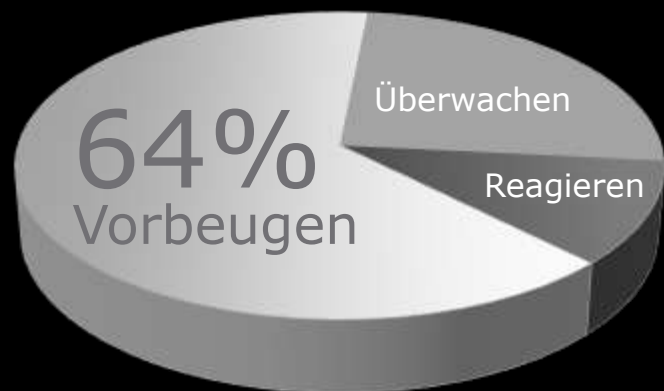
# IT morgen



**Kunden & Mitarbeiter wollen  
direkten, uneingeschränkten  
Zugang über mobile Devices**



# IT bisher



**Schutzmechanismen sind auf die Abwehr und Verhinderung von Eindringlingen ausgerichtet.**

# IT morgen



NETZWERK  
PAKETE



LOG FILES



IT GÜTER



INFORMATIONSGÜTER



**Lernfähige, datengestützte Schutzmechanismen**



**BILLIONS OF USERS**  
**BILLIONS OF DEVICES**



Mobile Cloud Big Data Social  
**Mobile Devices**

**MILLIONS OF APPS**



**HUNDREDS OF MILLIONS OF USERS**



LAN/Internet Client/Server  
**PC**

**TENS OF THOUSANDS OF APPS**



**MILLIONS OF USERS**






**1ST PLATFORM**

Mainframe, Mini Computer  
**Terminals**

**THOUSANDS OF APPS**






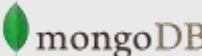




















# An Application Perspective of P1, P2 & P3

|  | Method                       | Tools           | Data Services  | Resilience                |
|--|------------------------------|-----------------|--|---------------------------|
| <br>Mobile            | Agile Development Method     | PaaS Frameworks | Data Fabrics<br>Performance: In-memory<br>Capacity: Hadoop | Application Resilience    |
| <br>PC, Client/Server | Waterfall Development Method | Java<br>.NET    | Relational Database  | Infrastructure Resilience |
| <br>Terminal          |                              | COBOL<br>PL1    | Hierarchical Database<br>Flat Files                        | Monolithic                |













Source: IDC

# Industry Perspective

|  | Method                       | Tools   | Data Services   | Resilience  |
|--|------------------------------|---|---|---|
|  <p>3<sup>RD</sup><br/>PLATFORM<br/>Mobile</p>            | Agile Development Method     | <br><br>          | <br><br> | <p>Application Resilience</p>  HDFS  |
|  <p>2<sup>ND</sup><br/>PLATFORM<br/>PC, Client/Server</p> | Waterfall Development Method |  J2EE<br>.NET<br>  | <br><br> |  <br><br>  |
|  <p>1<sup>ST</sup><br/>PLATFORM<br/>Terminal</p>          |                              | COBOL<br>PL1  |    |     |

Source: IDC

# An EMC Federation Perspective of P1, P2 & P3

| Expected Growth  | \$ Opportunity Size  | Method  | Tools   | Data Services   | Resilience   | Converged   |   |   |
|--|--|---|---|---|--|---|---|---|
|  | <br>Mobile            |  |  | Pivotal XD<br>GEMFIRE<br>SAP HANA<br>Inmemory: DSSD,<br>Transactional: ScaleIO<br>or VSAN + COTS        | Pivotal HD<br>GREENPLUM<br>A DIVISION OF EMC<br>Data Tubs: Isilon,<br>ViPR, Nile<br>COTS                 | N<br>A<br>t<br>i<br>l<br>i<br>m<br>o<br>s<br>e      | <br>ECS(COTS)    | Emerging<br>Hyper<br>Converged<br> |
|  | <br>PC, Client/Server |   |   | ORACLE<br>SYBASE<br>SQL Server<br>SRDF, TimeFinder,<br>RecoverPoint,<br>VPLEX, ConGroups                | I<br>S<br>i<br>l<br>o<br>n<br>ScaleIO<br>or VSAN<br>+ COTS<br>VPLEX, RecoverPoint,<br>Avamar, DataDomain | V<br>M<br>A<br>X<br>V<br>M<br>A<br>X<br>X<br>I<br>O | <br>VSPEX<br>BYO |   |
|  | <br>Terminal          |   |   | <br>SRDF, TimeFinder | V<br>M<br>A<br>X<br>GDDR<br>ConGroups<br>Backup DLM  | Mainframe   |   |   |

Source: IDC



# Ein Starker Kontrast.

Web Tier

J2EE/.NET  
App Tier

RDBMS  
Tier

**Infrastructure** Resilience  
Needs Moderate to Low Latency  
Needs Block, NAS

Web Tier

App Fabric  
(PaaS)

Data Fabric

In Memory

Needs a lots of  
CPU and RAM,  
no storage

Distributed  
NoSQL

MapReduce

**App** Resilience.  
Needs HDFS, Capacity (\$/GB), Scale,  
Manageability, Bandwidth

# Agenda

**IT heute...**

**Big Data**

**EMC Corporation**



# The DIGITAL UNIVERSE of OPPORTUNITIES

RICH DATA  
& the Increasing  
Value of the  
INTERNET  
OF THINGS



EMC DIGITAL  
UNIVERSE

With Research  
& Analysis By



EMC<sup>2</sup>

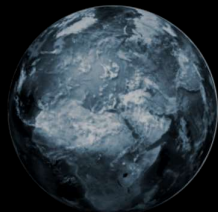


# Digital Universe 2014

2013

4.4

ZETTABYTES



10x

MORE

2020

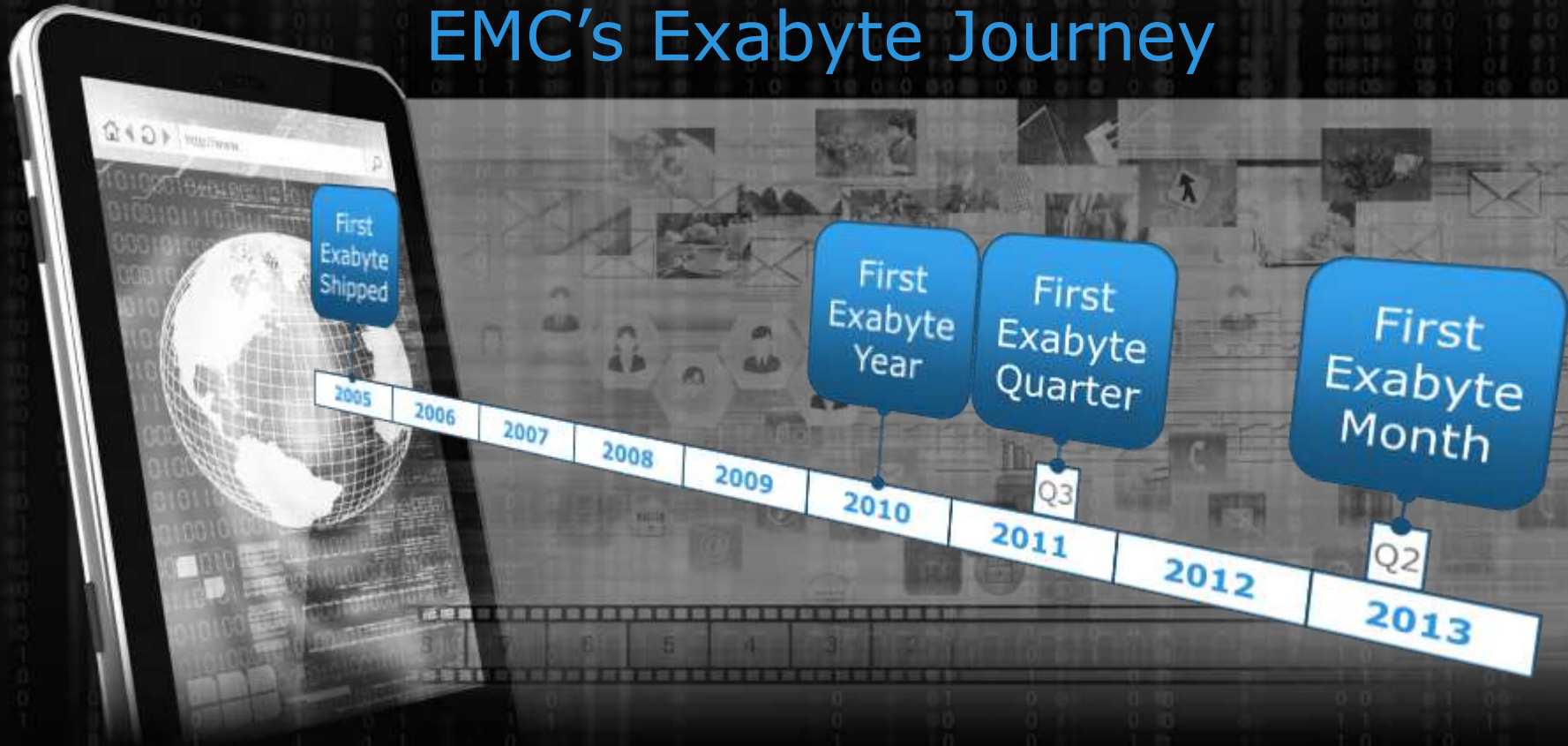
44

ZETTABYTES



ZETTABYTE = 1,000,000,000,000,000,000 bytes

# EMC's Exabyte Journey



EMC<sup>2</sup>

# Digital Universe 2014

**2013**

**28**

MILLION  
IT PROS WORLDWIDE



**8**

MILLION MORE  
OF YOU



**2020**

**36**

MILLION  
IT PROS WORLDWIDE



# Digital Universe 2014

2013

230

GB PER IT PRO

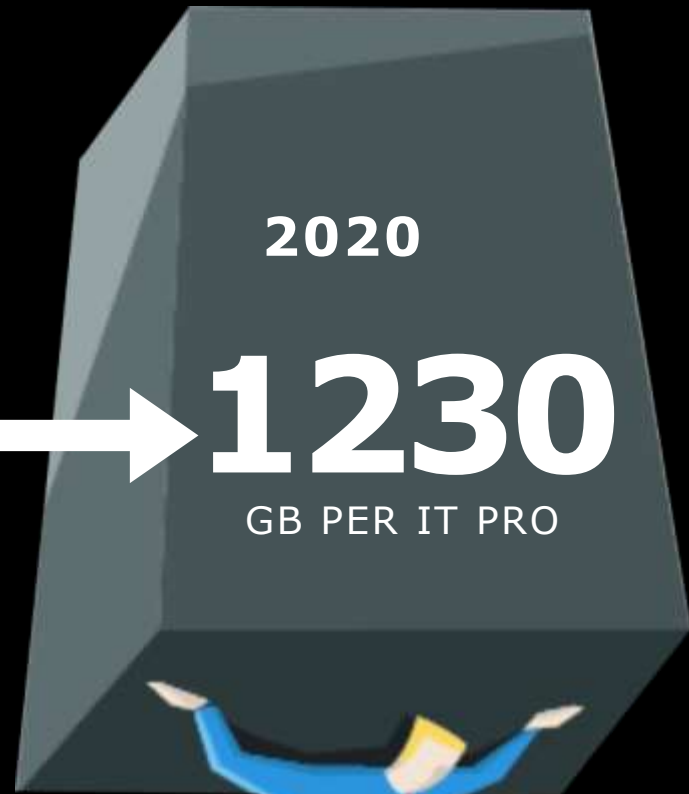
5x

MORE

2020

1230

GB PER IT PRO



Source: EMC Digital Universe with Research and Analysis by IDC, *The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things*, April 2014.

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EMC<sup>2</sup>

# 85 PETABYTES

Gingen an einen Web Provider

= 20,772 Festplatten



= 300 Paletten

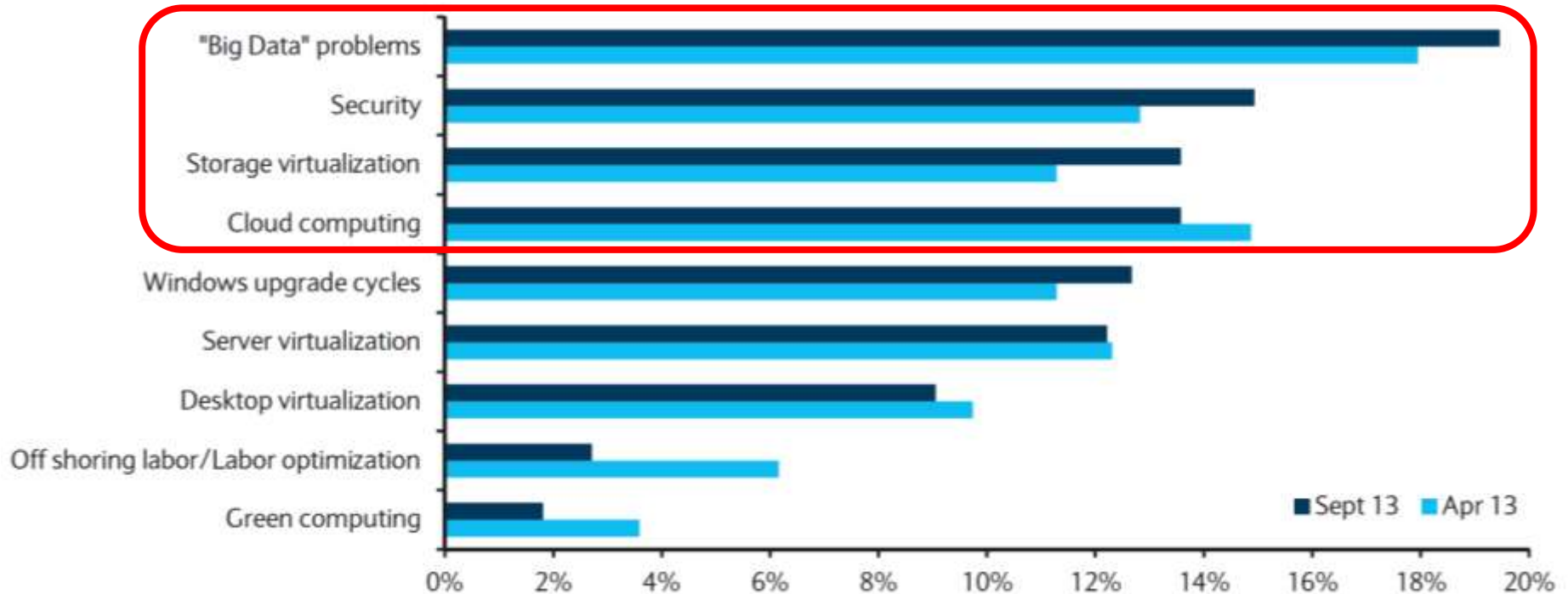


= 8 LKWs



EMC<sup>2</sup>

# Top IT Investitionsbereiche in 2014



Source: Barclays CIO Survey, September 2013

# Agenda

**IT heute...**

**Big Data**

**EMC Corporation**





# EMC<sup>2</sup>

# Egan Marino C<sup>2</sup>orporation

1979 Gründung von EMC durch



Richard Egan und Roger Marino

# EMC Corporation: Zahlen und Fakten

176 South Street, Hopkinton,  
Massachusetts, USA



|                           |            |
|---------------------------|------------|
| Gegründet:                | 1979       |
| Umsatz (2013):            | \$23,2 Mrd |
| Gewinn:                   | \$3,9 Mrd  |
| R&D (2013, 12,3%):        | \$2,8 Mrd  |
| Market Cap (03.2014):     | \$56.4 Mrd |
| Mitarbeiter:              | 62.000     |
| Patente:                  | 4.700      |
| Barron's 500 Rank (2013): | 51         |
| Fortune 500 Rank (2013):  | 133        |

# EMC Dual Innovation Strategy



Research &  
Development

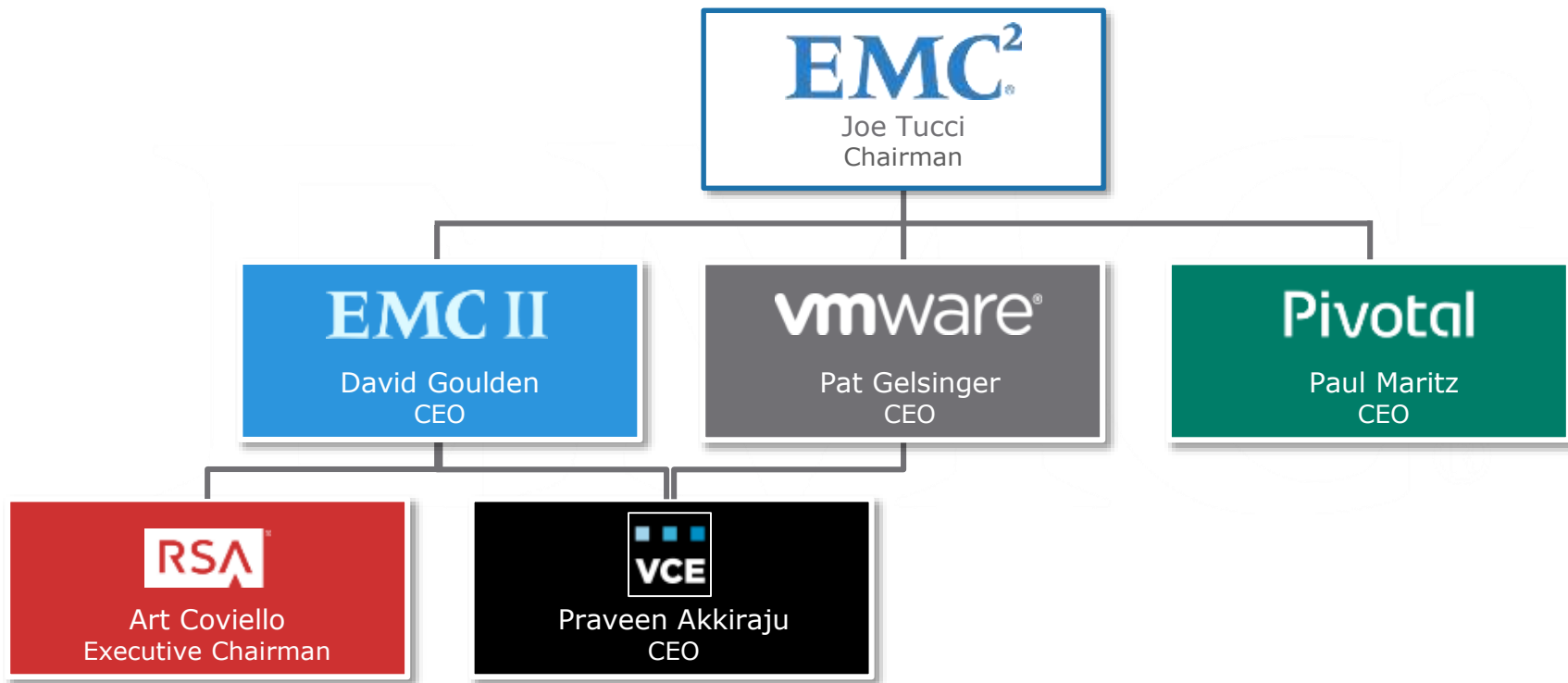
**12%**  
Of Revenues



Technology  
Acquisitions

**10%**  
Of Revenues

# Unsere Föderation



**FORTUNE**  
**WORLD'S MOST**  
**ADMIRED**  
**COMPANIES**<sup>®</sup> **2014**  
COMPUTER INDUSTRY

- 1 Apple
- 2 EMC

# Ausbildung und Zertifizierungen

Cloud Expert, Data Scientist – Kompetenzen für morgen...



**1.300+**  
Universitäten  
&  
Hochschulen



**200.000**  
Studenten



**3.600.000**  
Stunden



**90.000**  
ausgebildet



**100.000**  
verkaufte  
Exemplare



**5M+**  
Web Besuche



**900.000+**  
Fans



EMC<sup>2</sup>®