



Big data: veliki podaci, velika prilika

Stipe Pavičić
IBM SMB RoadShow Osijek,
21.02.2013.



Big data: veliki podaci, velika prilika



SMB RoadShow kroz prošlost

2007 – Informacijski izazovi malih i srednjih tvrki

2008 – Poslovni izazovi upravljanja dokumentima i procesima

2009 – Zeleni IT; Web 2.0 i novi način poslovanja

2010 – Cloud computing

2011 – Optimizacija poslovanja

2012 – Jeste li dovoljno E(U)fikasni?

2013 -



Big data: veliki podaci, velika prilika



Big Data – veliki podaci, velika prilika

Alen Gojčeta, IBM Hrvatska



Big data: veliki podaci, velika prilika



Slijed predavanja

Što je Big Data? - Nastanak i promjena paradigme

Primjene i ograničenja

Tehnologija

Prilike za Hrvatsku akademsku zajednicu i industrijsku politiku



Big data: veliki podaci, velika prilika



Prva promjena paradigme – od društvenog fenomena do podatka kao nositelja informacije

Stevan Dedijer: „Pojam Business Intelligence označava sposobnost da se snađeš u poslovnom svijetu, da postigneš svoje ciljeve.”



Big data: veliki podaci, velika prilika



Druga promjena paradigme – od podatka do podatkovne masovnosti i sveprisutnosti (Volume, Velocity, Variety)

Volumen

12 terabajta

Tweetova dnevno

Sentimenti prema proizvodu

Brzina

5 milijuna

Burzovnih transakcija u sekundi

Potencijalna prijevara

Raznolikost

100-e video zapisa

S nadzornih kamera

Nadzor događaja od interesa

350 milijardi

otčitavanja električnih brojila godišnje

Predviđanje potrošnje energije



500 milijuna

zapisa o telefonskim pozivima dnevno

Prevenција korisničkog napuštanja

80% rasta podataka

su slike, video i dokumenti...

Poboljšanje korisničkog zadovoljstva



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Okruženje mijenja paradigmu

U današnjem digitalnom svijetu postoji dostupno 1.8 trilijuna gigabajta podataka

2012 se dnevno proizvodi 2,5 eksabajta (milijarda gigabajta) podataka

90% svih svjetskih podataka generirano je tijekom posljednje dvije godine



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Big Data – primjene u praksi

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Big data: veliki podaci, velika nriatika



Big Data posvuda

5 Lessons Marketers Can Learn From Obama's Victory

November 2, 2010 by Todd Wasserman

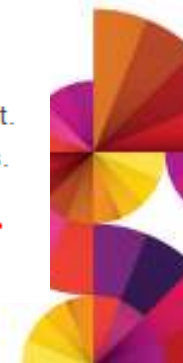


1. It's the Big Data, Stupid

Big Data may have its flaws, but this election shows that it's indispensable. *New York Times* columnist Nate Silver showed how crunching numbers can render most pundits' gut instincts irrelevant. The Obama campaign proved the same for the marketer's gut. As *Time* chronicled, the Obama campaign relied on a team of dozens of number crunchers who made predictive calls on exactly the right type of pitch to right the right type of voter.

After consolidating its database into one megafile, the team relentlessly tested pitches based on the targeting and learned from its testing. As the article states:

A large portion of the cash raised online came through an intricate, metric-driven e-mail campaign in which dozens of fundraising appeals went out each day. Here again, data collection and analysis were paramount. Many of the e-mails sent to supporters were just tests, with different subject lines, senders and messages. Inside the campaign, there were office pools on which combination would raise the most money, and often the pools got it wrong.



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Big Data u nebrojenim scenarijima

Izbori ☺

Medicina (IBM Watson)

Zrakoplovstvo

Optimizacija gradskog prometa

Lanac nabave

Komunikacije

Dinamika fluida

Upravljanje klijentima / prevencija odlazaka

Upravljanje klijentima / preciznije kampanje

Sigurnost / prevencija prijevara

Poljoprivreda

Stočarstvo

...



Big Data @ Work

Organizations in all industries are under increasing pressure to capitalize on data.

- Healthcare**
The average amount of data per hospital will increase from 167TB in 2013 to 445TB in 2015, driven by the enormous growth of medical images and electronic medical records.
With Big Data
Medical professionals can improve patient care and reduce costs by extracting relevant clinical information from vast amounts of data to better understand the past and predict future outcomes.
- Customer Service**
Today, 86% of consumers quit doing business with a company because of a bad customer experience, up from 59% four years ago.
With Big Data
Service representatives can use data to gain a more holistic view of their customers, understanding their likes and dislikes in real-time in order to resolve a problem or capitalize on happy clients faster.
- Insurance**
Insurance companies and government agencies each gather fraud data related to their own individual missions. But the kind, quality and volume of data compiled varies widely.
With Big Data
An insurance or citizen services provider can apply advanced analytics to data and detect fraud quickly, before funds are paid out.
- Financial Services**
Wall Street alone delivers 5 new research documents every minute. Dow Jones publishes upwards of 15,000 news items per day.
With Big Data
Financial services professionals can better understand market changes through improved business insight from data, helping to anticipate performance gaps and more accurately assess investment alternatives.
- Retail**
\$125 billion in total sales are missed each year because retailers don't have the right products in stock to meet customer demand.
With Big Data
Retailers can better understand their customers by analyzing sales trends and incorporating more accurate forecasting, ultimately increasing customer loyalty and revenue.
- Communications**
3 billion global subscribers in the telco industry are demanding unique and personalized offerings that match their individual lifestyles.
With Big Data
Communications providers can use data to create a more personalized customer experience and avoid losing customers to competitors.

*Information gathered by IBM
1. North American Health Care Provider Information Report 2013 © Perich, Inc.
2. Electronic Medical Records
3. Healthcare Information Systems Report, April 2014
4. 2014 Global Healthcare Fraud
5. The Future of Retail, McKinsey, June 2011
6. IBM Global Business
7. IBM Global Business
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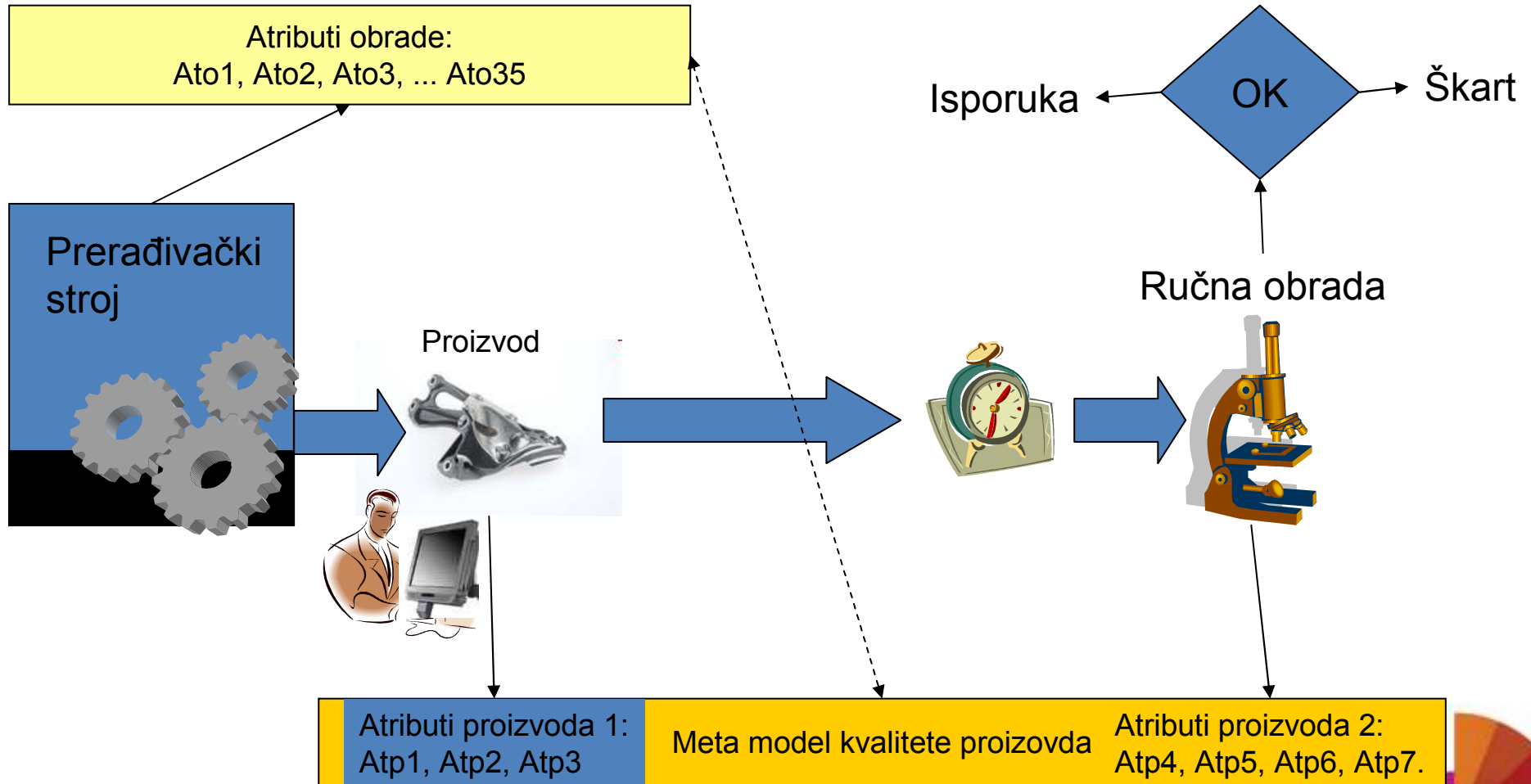
Big Data – ograničenja

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Slučaj jedne proizvodne tvrtke

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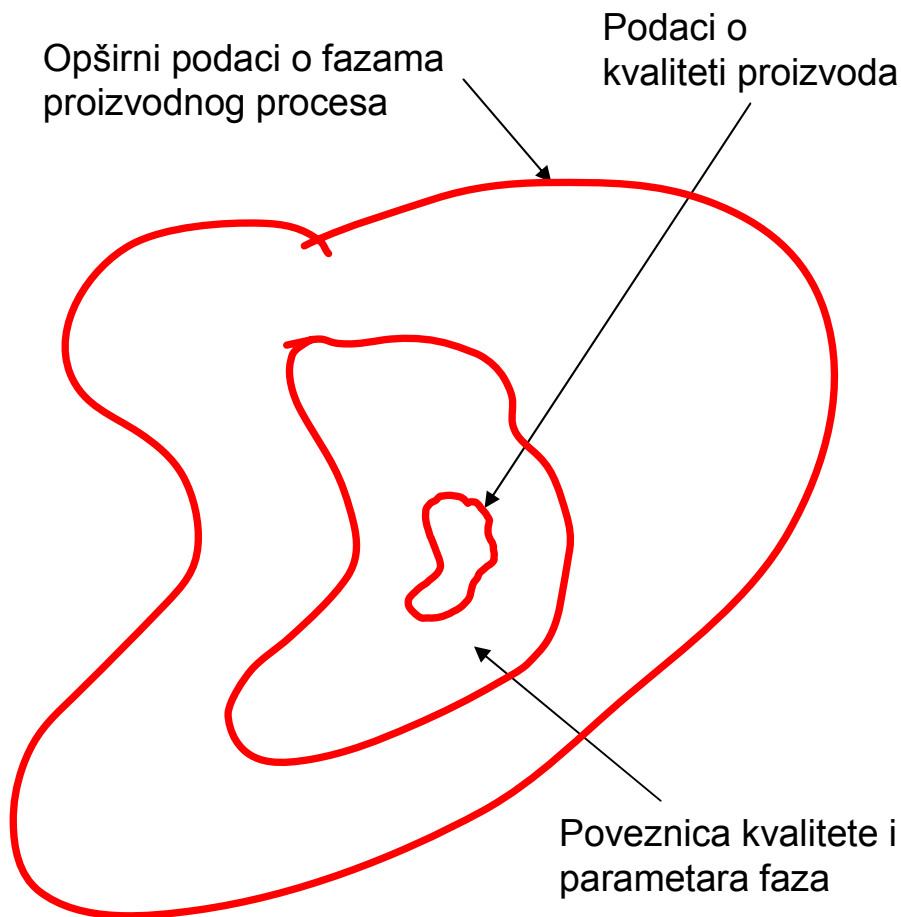
ID ciklusa stroja kao poveznica između kvalitete proizvoda i parametara stroja



Big data: veliki podaci, velika prilika



I Big Data podaci moraju sadržavati poželjan ishod – primjer 1



Postojali su podaci o 35 parametara proizvodnje

Data mining je davao uzorke devijacije parametara proizvodnje

Nedostajala je spoznaja o tome kako je to utjecalo na kvalitetu proizvoda



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QR kôd kao sredstvo integracije?



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Tehnologija

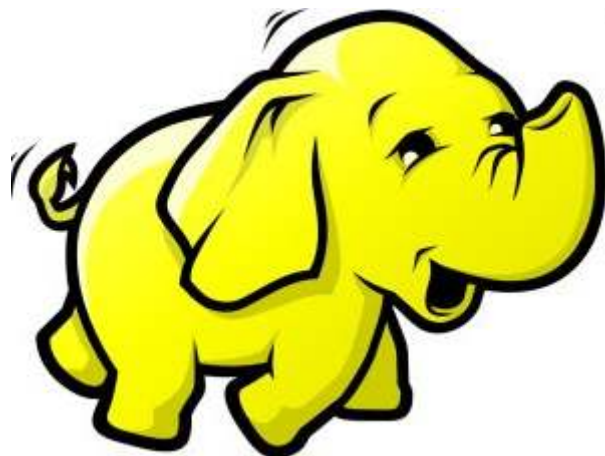
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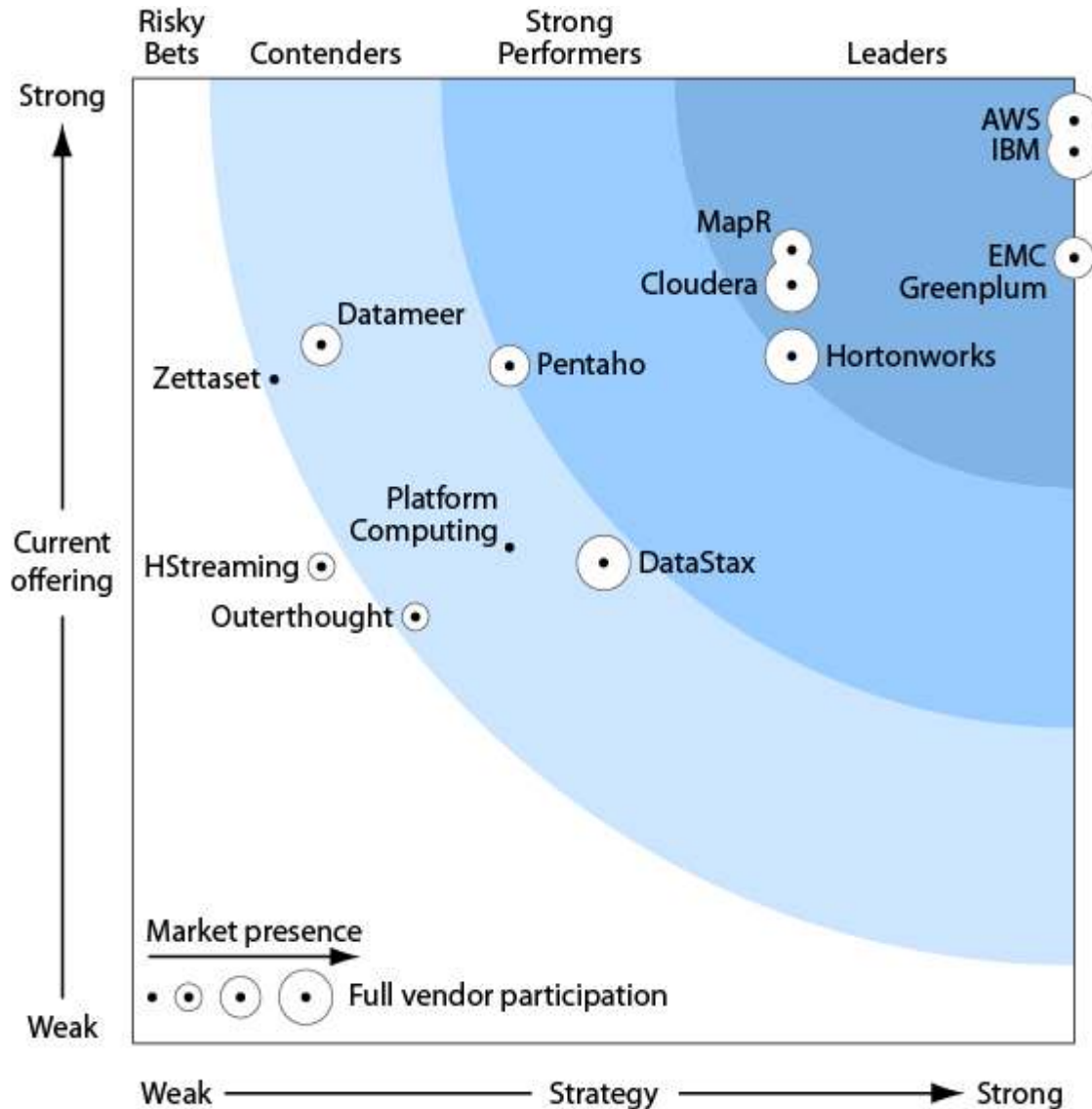
Tko zna što je ovo?



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Forrester Wave na temu Hadoopa

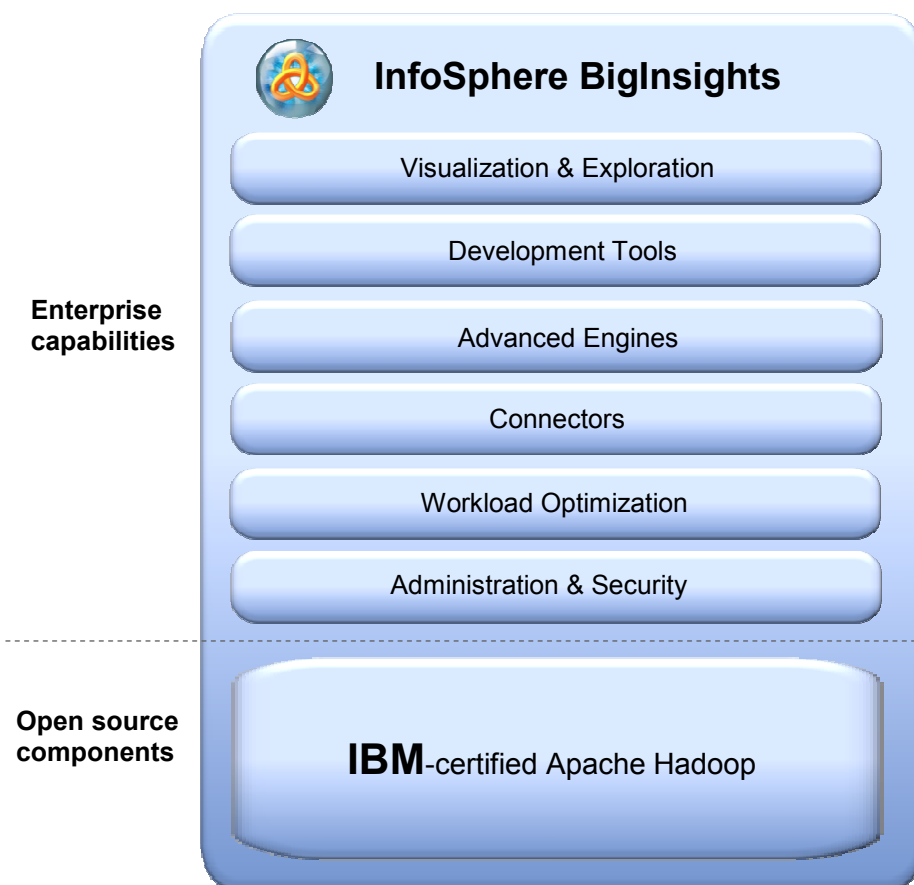


“IBM has the deepest Hadoop platform and application portfolio. IBM, an established EDW vendor, has its own Hadoop distribution; an extensive professional services force working on Hadoop projects; extensive R&D programs developing Hadoop technologies; connections to Hadoop from its EDW.”

–The Forrester Wave™: Enterprise Hadoop Solutions, 1Q12

BigInsights – proširuje mogućnosti Open Source Hadoopa

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Tehničke prednosti

Ugrađena analitika

Text analytics engine, annotators, Eclipse alati
Interface prema project R (statistička platforma)

Duboka integracija s IBM softwareom

Spreadsheet-style analitički alat

Predefinirani biznis-proces akceleratori

Predinstalirane podržane open source i IBM komponente

Web konzola za admin i aplikativni pristup

Dodatna sigurnost, performansne značajke,...

Standardno IBM licenciranje i vrhunska podrška

Puna open source kompatibilnost

Siguran daljnji razvoj novih mogućnosti

Hadoop Use Cases



Analyze a Variety of Information

Novel analytics on a broad set of mixed information that could not be analyzed before



Analyze Extreme Volumes of Information

Cost-efficiently process and analyze petabytes of information



Discovery and Experimentation

Quick and easy sandbox to explore data and determine its value



IBM u usporedbi s konkurencijom

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IBM BigInsights naširoko koristi Hadoop, uključujući analitičke akceleratori (za tekst i vizualizaciju)

IBM BigInsights nudi fleksibilnost i nižu cijenu rješenja jer je dostupan kao softver, u cloudu ili na fleksibilnoj IBM hardverskoj referentnoj arhitekturi

IBM nudi kompletno Big Data rješenje, uključujući BigInsights, Streams, MPP Database, integraciju informacija

IBM je prilagodio Apache Hadoop za enterprise, čvrsto povezan sa skladištem podataka

IBM ima predefiniране opcije hardverske arhitekture na povoljnim System x (x86) ili PowerLinux (IBM Power) serverima



OVUM

“Company XY (IBM competitor) underestimates Hadoop’s potential as an analytics platform in its own right Ovum, February 2012

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Prilike za Hrvatsku

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Prilike za hrvatsku akademsku zajednicu i industrijsku politiku

Data scientist za profesionalce

Matematički algoritmi za odlikaše

Hadoop aplikacije za softveraše

Industrija senzora za hrvatsku industrijsku politiku

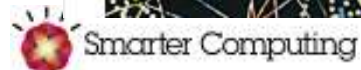


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Data scientist preko oglasa za profesionalce

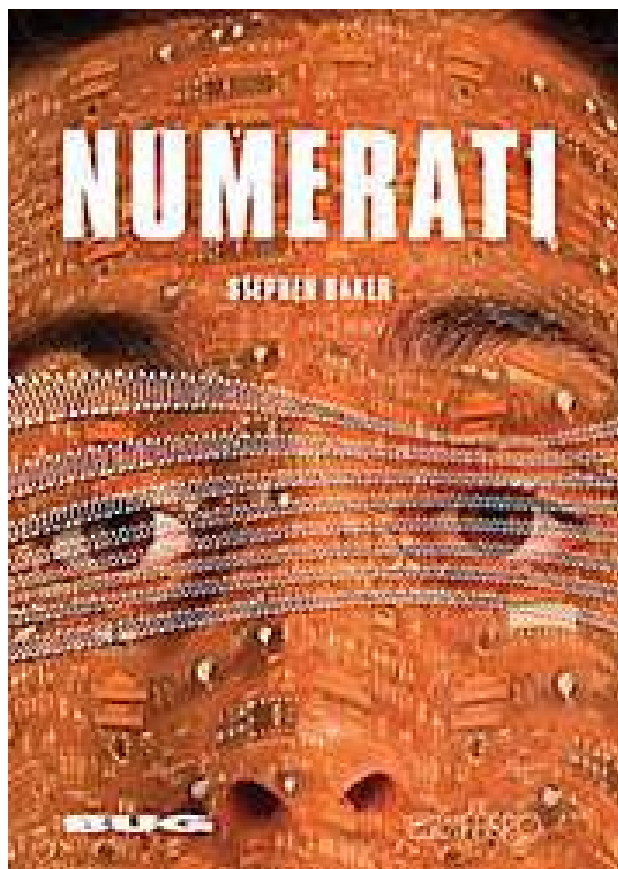
The screenshot shows the Harvard Business Review website interface. At the top left is the Harvard Business Review logo. To its right is a search bar with a 'SEARCH' button. Below the logo is a navigation menu with links for 'THE MAGAZINE', 'BLOGS', 'AUDIO & VIDEO', 'BOOKS', 'WEBINARS', 'COURSES', and 'STORE'. A secondary navigation bar shows 'Registered | limited access' on the left and 'ALEN GOJCETA | Subscribe | My Account' on the right. The main content area features the article title 'Data Scientist: The Sexiest Job of the 21st Century' by Thomas H. Davenport and D.J. Patil. Below the title are social media sharing icons and a 'Comments (0)' section. A 'RELATED' section below the article lists 'Executive Summary' and 'ALSO AVAILABLE'. On the right side, there are two promotional banners: one for 'Subscribe & Save Up to' and another for 'COMPREHENSIVE LEADERSHIP PROGRAM'.



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Matematički algoritmi za odlikaše



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Massive Paralell Processing (npr Hadoop) aplikacije za softveraše

The screenshot shows the ReversingLabs website. At the top left is the 'REVERSING LABS' logo. A navigation bar contains links for HOME, SOLUTIONS, PRODUCTS, TECHNOLOGY, RESOURCES, and ABOUT. The main content area features a large graphic of a black and white geometric pattern on the left and the 'TitaniumCore' product name on the right. Below the name, it says 'AUTOMATED STATIC DECOMPOSITION OF FILES' and describes the product as a 'File Analysis Platform'. At the bottom, there are three columns: 'INTRODUCTION', 'HIGHLIGHT', and 'NEWS'. The 'HIGHLIGHT' column features a section for 'TitaniumCore™ Automated Static Decomposition' with a download link for a 2-week trial. The 'NEWS' column lists two articles from 2012-10-12.

<http://www.reversinglabs.com/>



Executive Team
Mario Vuksan, CEO
Tomislav Pericin, Chief Software Architect

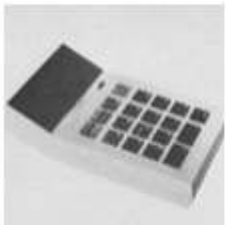


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Što tu ima za hrvatsku industriju?

ENTRY



digitron, db 801-3
Taschenrechner

iF product design award 1974
Office Business

DESIGNER

Not announced

MANUFACTURER / CLIENT

digitron electronics equipment
factory
Buje,



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Dobar dizajn Digitronove vage, no što je zaista bio uspjeh?



[HOME](#) [AWARDS](#) [DESIGN SPECIALS](#) [SUCCESS STORIES](#) [SEARCH](#) [JUROR INDEX](#) [iF HOME](#)

[Back to selection](#) | [Directlink to this entry](#)

[Browse through entries](#) < 1/1 >



Electronic Price Computing Scale "SKALA 02"

Electronic Price Computing Scala

Awarded in iF product design award 1987



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Digitron Scala je 1985 imala mjerni pretvornik sile, a što danas ima iPhone

Senzor blizine – služi iskapčanju ekrana u svrhu izbjegavanja pokretanja komandi kad je telefon “na uhu”

Senzor pokreta / akcelerometar – omogućuje promjenu landscape / portrait usmjerenja ekrana, gašenje / utišavanje kod okretanja prema dolje

Senzor svjetla – detektira koliko je svjetlosti u okolici telefonate automatski prilagođava svjelost ekrana te omogućava odluku o korištenju blica

Senzor vlage – daje do znanja da je telefon smočen

Tro-osni žiroskop – u kombinaciji s akcelerometrom omogućava šest osi korištenja pri čemu je telefon osjetljiviji i fleksibilniji za primjene poput igara

Senzor dodira ekrana, senzor fokusa (kamera), ...



Big data: veliki podaci, velika prilika



Zaključno

Big Data je sintagma koja označava analitička rješenja temeljena na masivnom paralelnom procesuiranju (MPP) podataka.

Primjene su bezbrojne

Ograničenja su standardna

Tehnologija se temelji na Apache Hadoopu, open source softveru kojeg je IBM širom prigrio u svom Infosphere BigInsights rješenju

Hrvatska mora profitirati od dobrobiti umreženog i digitaliziranog planeta kroz:

INDUSTRIJU: industriju senzora,

IT TVRTKE: razvoj Big Data rješenja temeljenih na MPP,

SVEUČILIŠTA: razvoj matematičkih algoritama,

POJEDINCI: stjecanje tehnika i vještina upravljanja velikim količinama različitih podataka

