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Insurance Technology Trends

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www.novarica.com

About Novarica

- Strategy advisors focused on insurance operations and technology

- Knowledge-based services

  - Personal experience of principals

  - Moderated knowledge-sharing community of over 300 insurer senior IT executives (Novarica Insurance Technology Research Council)

  - Ongoing research into solution-provider marketplace and other insurance industry data

- Published research, retained advisory, and project-based consulting

- Division of Novantas, Inc., leading management consultancy for financial services industries

Agenda

- Market Conditions

  - Technology changes and opportunities

  - The consumer of today

  - What the experts say – the outlook

  - Insurer strategies

- Trends across the insurance value chain

- Where should you invest?

- Finding the right technology Partner

Market Overview

A Time of Unprecedented Rapid Technology Changes

"The magnitude of upcoming change will be stunning. We are only in spring training"

• "Fearless and Connected Consumers"

• "Unprecedented combo of Focus on Technology AND Design,"

• "Beautiful/Relevant/Personalized Content for Consumers"

Mary Meeker, State of the Internet 2012 http://kpcb.com/insights/2012-internet-trends (slide 85)

"A world of plentiful, accurate data, powerful sensors, and massive storage capacity and processing power…this is the world we live in now. It's one where computers improve so quickly that their capabilities pass from the realm of science fiction into the everyday world not over the course of a human lifetime, or even within the span of a professional's career, but instead in just a few years."

- *Brynjolfsson and McAfee, Race Against the Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy (2011)*
*www.RaceAgainstTheMachine.com*   **4**

Information businesses are designed around the best information technology available at the time

- **Communication**

  - Face-to-face

  - Physical (paper via messenger, ship, post)

  - Real-time Electric (telegraph, telephone)

  - Electronic (Email, Web)

  - Real-time Electronic (IM/SMS, Social computing)

- **Storage and Management**

  - Paper or Microfiche

  - Punch Cards

  - Flat files

  - Relational Databases

  - XML/Structured Data

Information Technology Capabilities

Analysis

Storage and Management

Communication
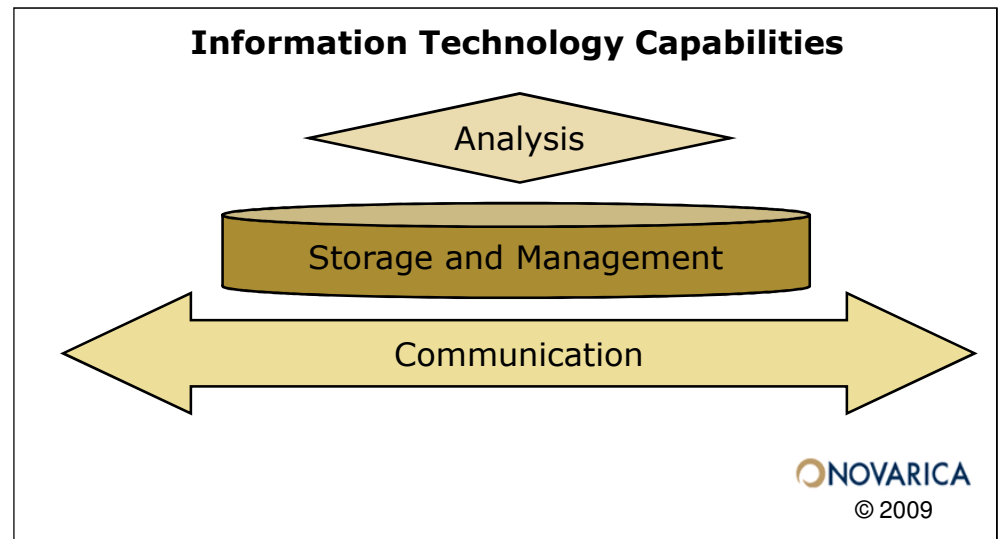
- **Analysis**

  - Highly trained experts

  - Tabulation

  - Linear computing

  - Complex computing

Are we trying to manage a 21st century industry on 20th (or 19th) century ideas about information technology?

The World We Live In Today: Data Super Abundance and Instant Information Access

"The future is already here, it's just not evenly distributed."
- William Gibson

Age of Data Super-Abundance

- **Old Data Moving Faster**
  - Government data – direct and through aggregators
    - MVR
    - Census
    - BLS
    - Local tax information
    - Police/FBI data
  - Medical data
    - MIB
   - Prescriptions
  - Business data
    - D&B, Lexis-Nexis, etc.

- **New Data is Proliferating**
  - Credit
  - Consumer Databases
  - Social Networking Analysis
  - Geographic Information Services
  - Satellite Photos

- **Internal Data is More Accessible and Better**
  - Database Technology
  - Data Warehousing
  - Enterprise Data Standards
  - SOA

The Current State of Information and Technology

More Information

Moving Faster

Moving in New Ways

Breaking Things
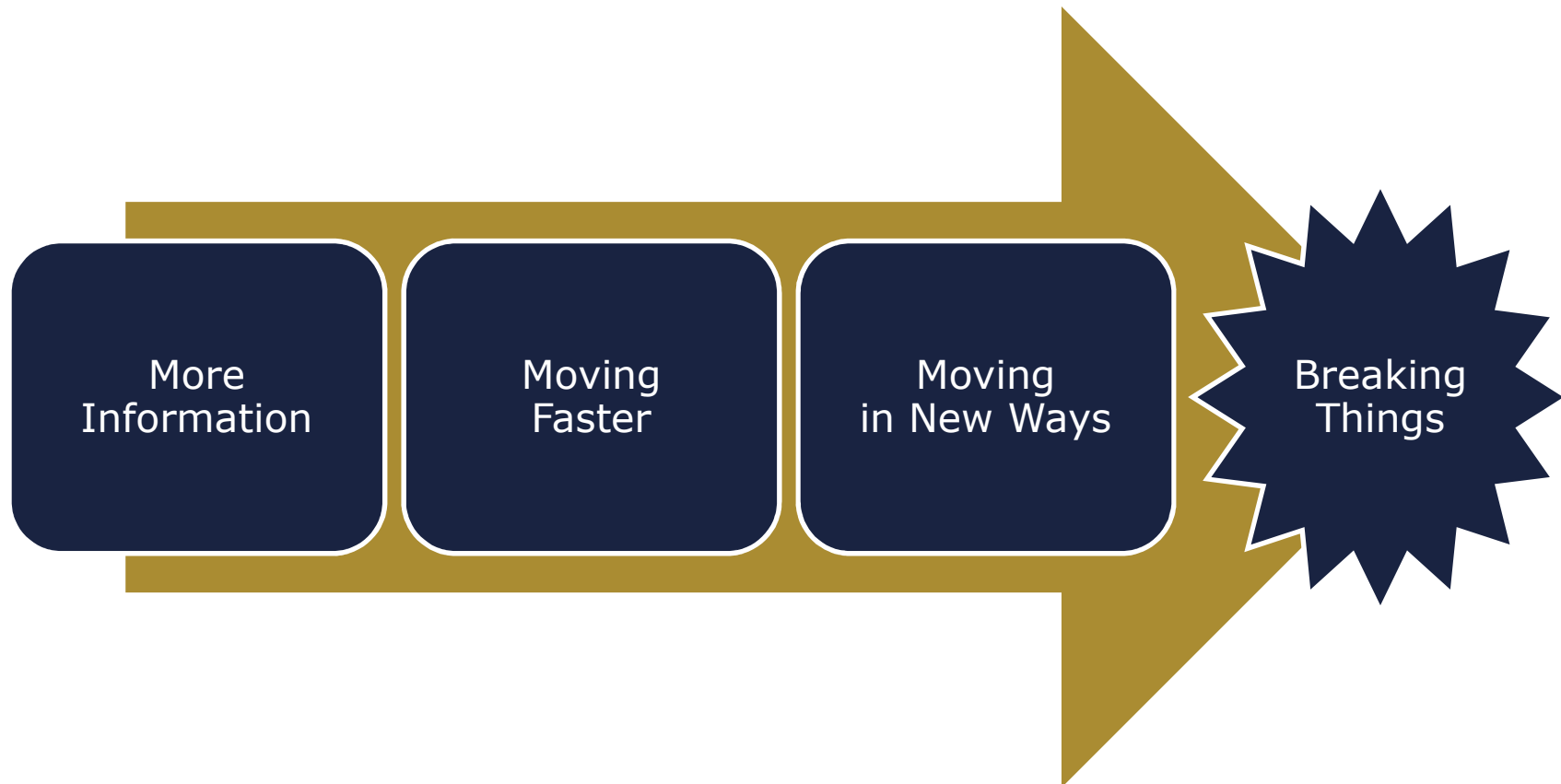
The Customer

Today, we live in a world of data super-abundance and instant information access. The internet, search engines and web services has elevated the "educated consumer" to a new level.
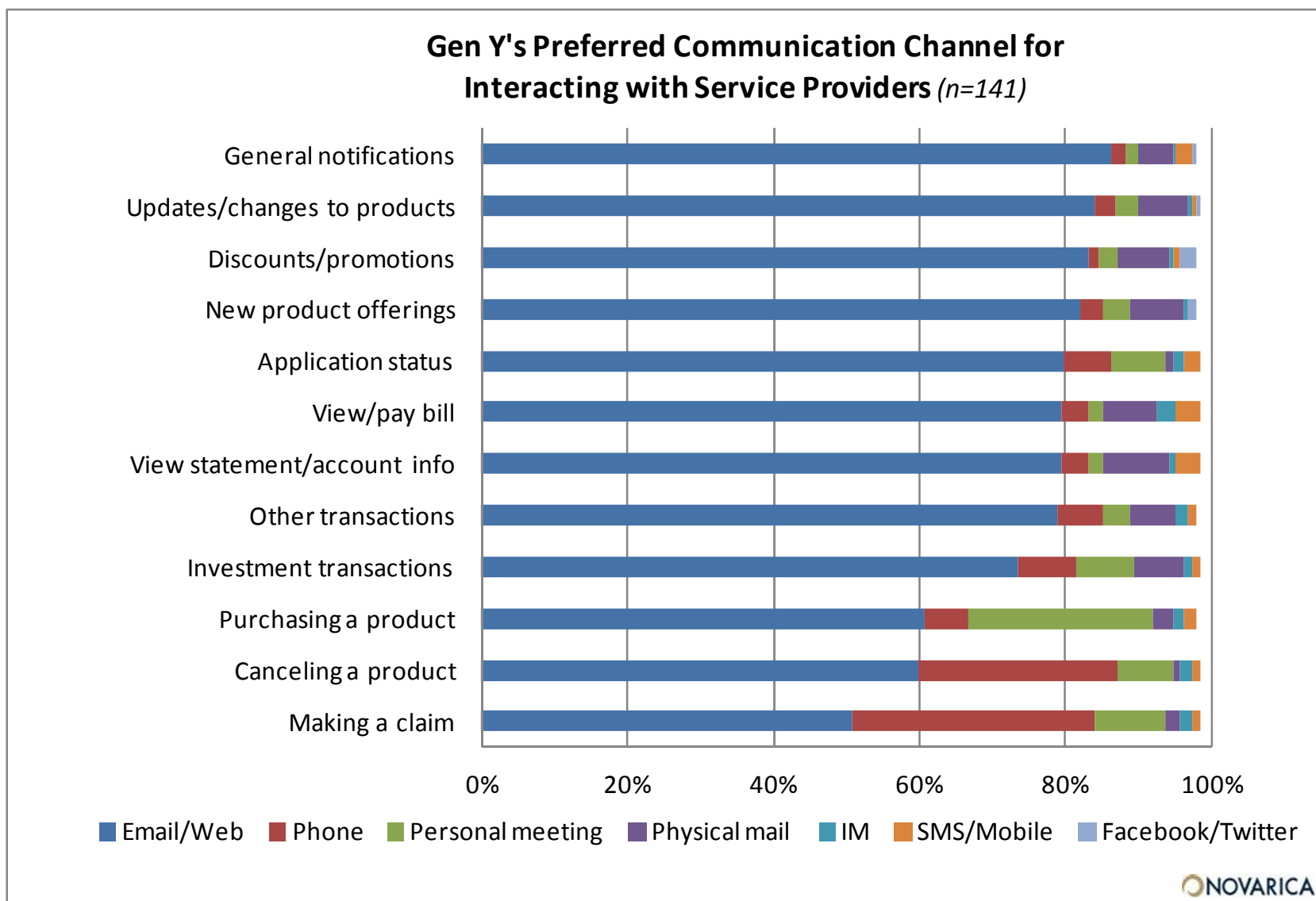
Producer and consumer expectations is driven not by what insurers are providing to them today, or by what other insurers are providing to their customers, but rather by what banks, airlines, hotels, and other service providers are offering them in their day-to-day lives.

- Banks send account balance or activity alerts
- Hotels allow check-in and check-out from smart phones
- Airlines present boarding passes on mobile devices.

Consumers expect to conduct business via the channel THEY prefer. They expect all options (In person, Phone, Online, Mobile). Mobile is the channel of choice for younger consumer.
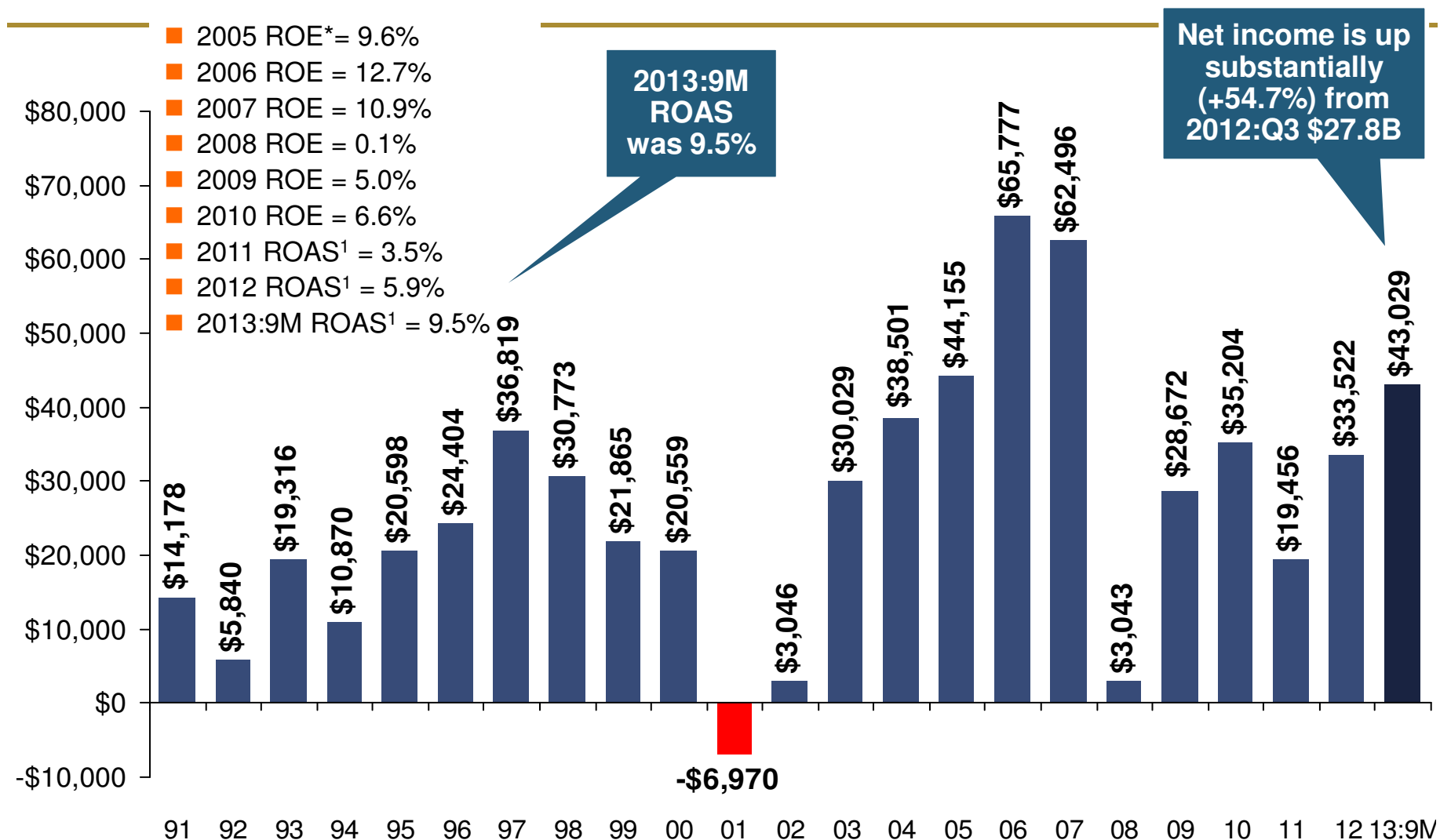
All of the above applies to our customers: consumers, businesses and agents

Gen Y Preferred Communications Channels

Gen Y's Preferred Communication Channel for Interacting with Service Providers *(n=141)*

Legend: Email/Web · Phone · Personal meeting · Physical mail · IM · SMS/Mobile · Facebook/Twitter

Categories (top to bottom): General notifications, Updates/changes to products, Discounts/promotions, New product offerings, Application status, View/pay bill, View statement/account info, Other transactions, Investment transactions, Purchasing a product, Canceling a product, Making a claim

What the economists say: III.org
P/C Net Income After Taxes 1991–2013:Q3 ($ Millions)

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Legend:
- 2005 ROE* = 9.6%
- 2006 ROE = 12.7%
- 2007 ROE = 10.9%
- 2008 ROE = 0.1%
- 2009 ROE = 5.0%
- 2010 ROE = 6.6%
- 2011 ROAS[1] = 3.5%
- 2012 ROAS[1] = 5.9%
- 2013:9M ROAS[1] = 9.5%

2013:9M ROAS was 9.5%

Net income is up substantially (+54.7%) from 2012:Q3 $27.8B

Bar chart values:
- 91: $14,178
- 92: $5,840
- 93: $19,316
- 94: $10,870
- 95: $20,598
- 96: $24,404
- 97: $36,819
- 98: $30,773
- 99: $21,865
- 00: $20,559
- 01: -$6,970
- 02: $3,046
- 03: $30,029
- 04: $38,501
- 05: $44,155
- 06: $65,777
- 07: $62,496
- 08: $3,043
- 09: $28,672
- 10: $35,204
- 11: $19,456
- 12: $33,522
- 13:9M: $43,029

Y-axis: $80,000 / $70,000 / $60,000 / $50,000 / $40,000 / $30,000 / $20,000 / $10,000 / $0 / -$10,000

•ROE figures are GAAP; [1]Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 8.9% ROAS through 2013:Q3, 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009.

Sources: A.M. Best, ISO, Insurance Information Institute

What the economists say: III.org
Growth in Direct Written Premium by Line, 2013-2015F*

(Percent)

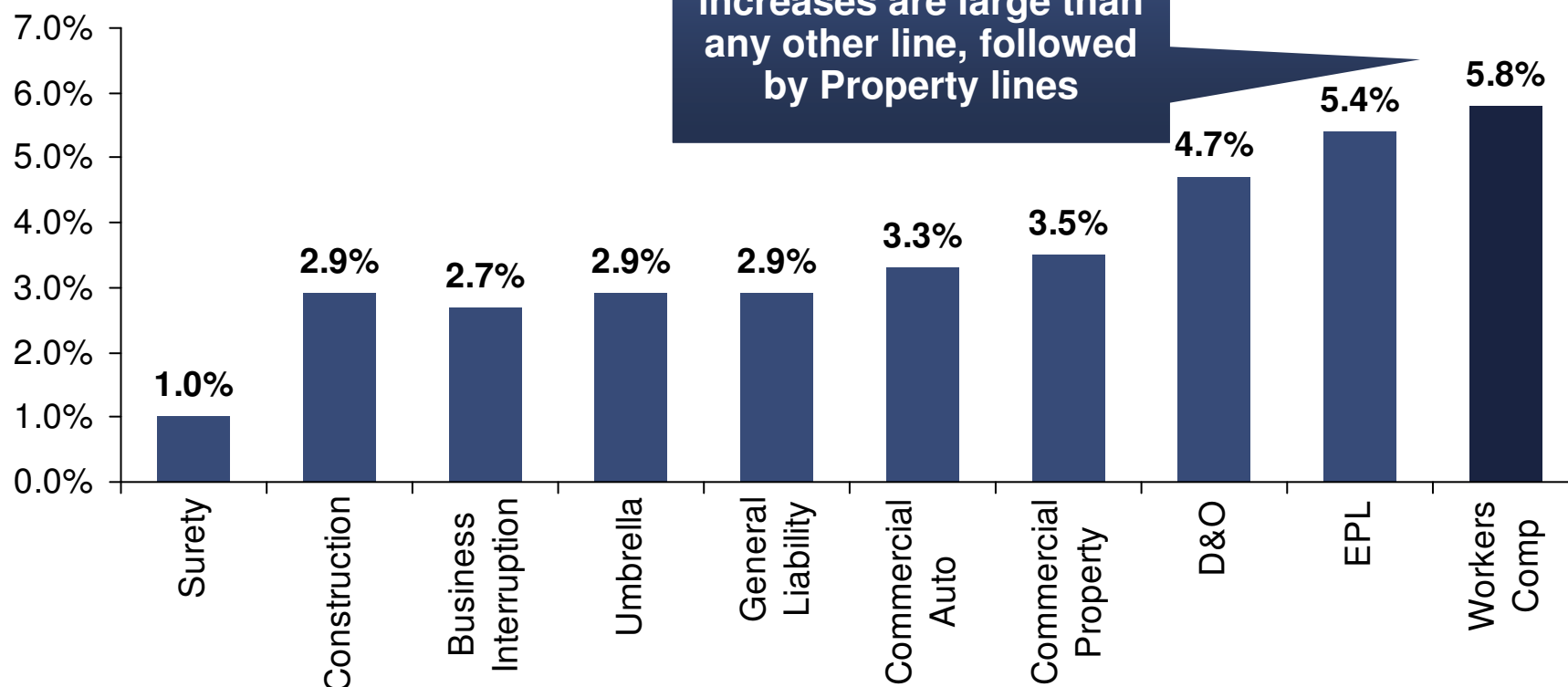P/C growth is expected to remain fairly stable through

Source: Conning.

Top Business Drivers 2014

Average Importance of Business Drivers IT Strategy for 2014
(1= not important, 7 = critically important)

Growth strategies
Competitive parity issues
Operational effectiveness issues
Compliance pressures
Pressure to reduce IT expenses specifically
Economic environment
Organization-wide expense reduction issues
Investment market losses
Recent operating losses

1.0 2.0 3.0 4.0 5.0 6.0 7.0

■ Mid/Sm P/C (n=57)   ■ Large P/C (n=21)   ■ Mid/Sm L/A (n=12)   ■ Large L/A (n=10)

Source: Novarica Research Council CIO Survey 2013Q3

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There Are A Limited Number Of Options For Growth

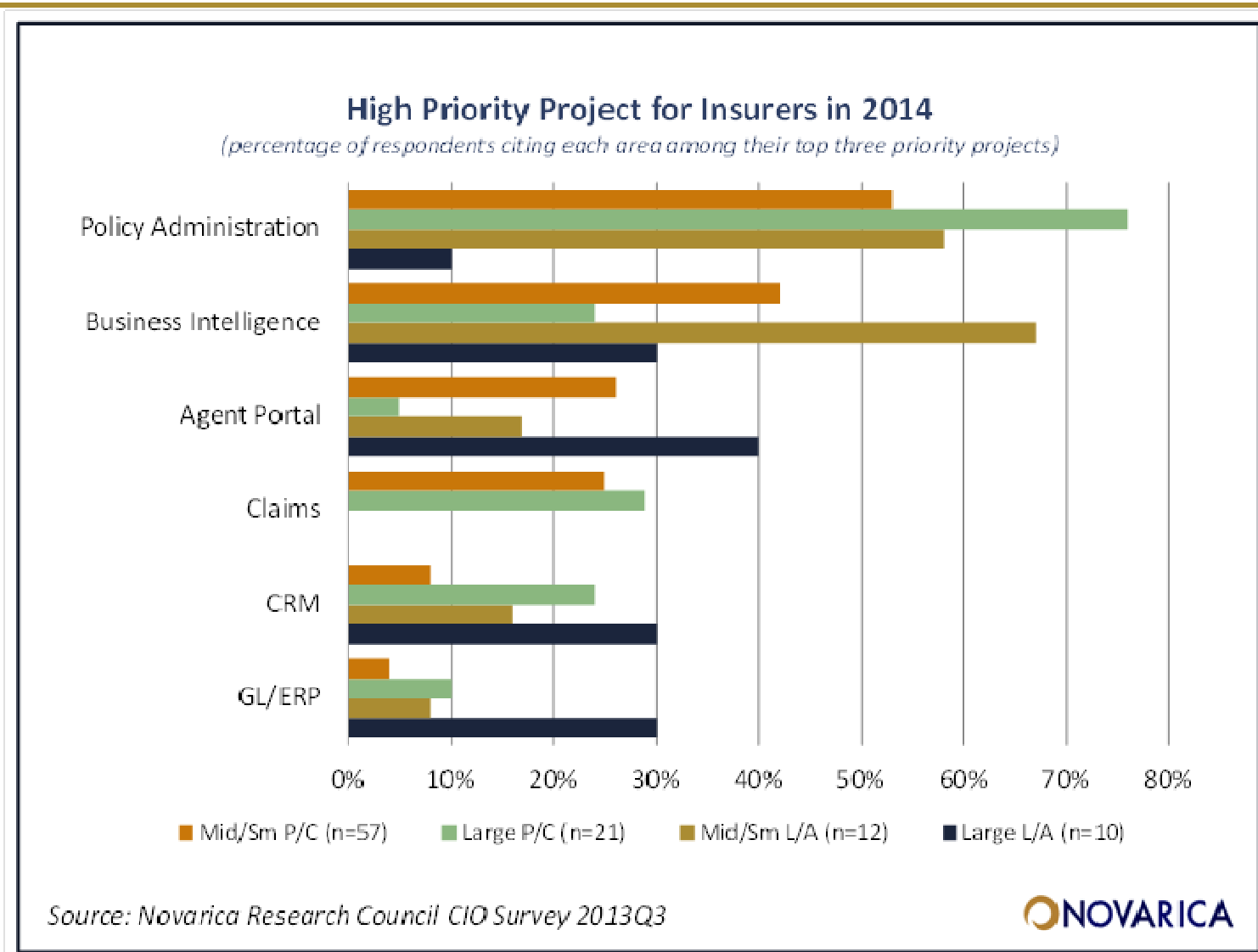| Distribution	• Extract more business from existing distribution channel • Improve retention of current business • Expand distribution channels • Expand into new territories
Products	• Sell more existing products to current policyholders • Create and sell new products • Better align pricing to risk quality
Marketing	• Strengthen brand • Improve competitive positioning
Acquisition	• Acquire book of business • Acquire company

Core Systems
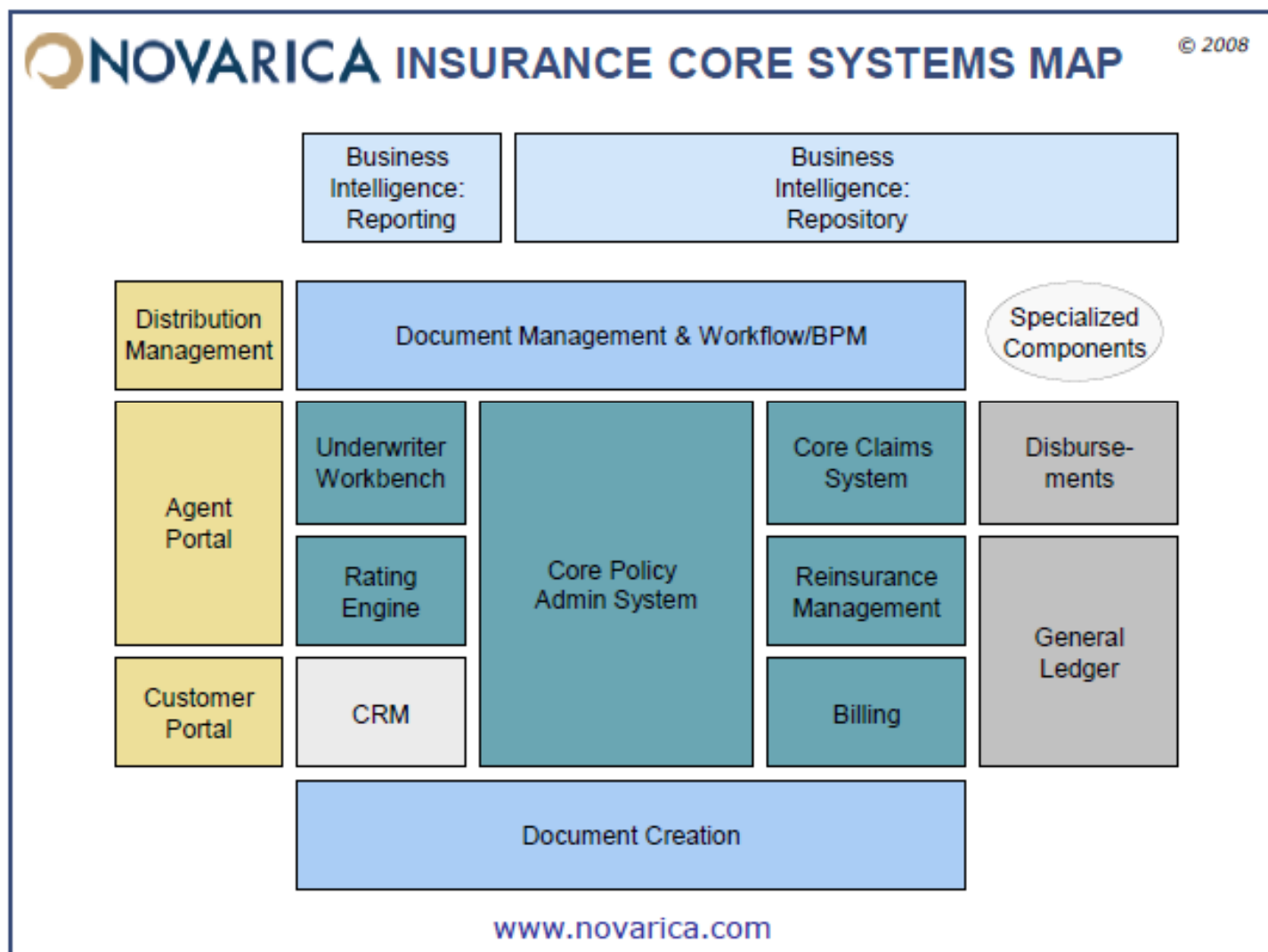
Insurer Top Projects for 2014

High Priority Project for Insurers in 2014
(percentage of respondents citing each area among their top three priority projects)

Source: Novarica Research Council CIO Survey 2013Q3

Trends Across the Insurance Value Chain

Insurers are implementing changes in all aspects of the value chain

Product Dev → Marketing → Distribution → Underwriting → Service → Claims
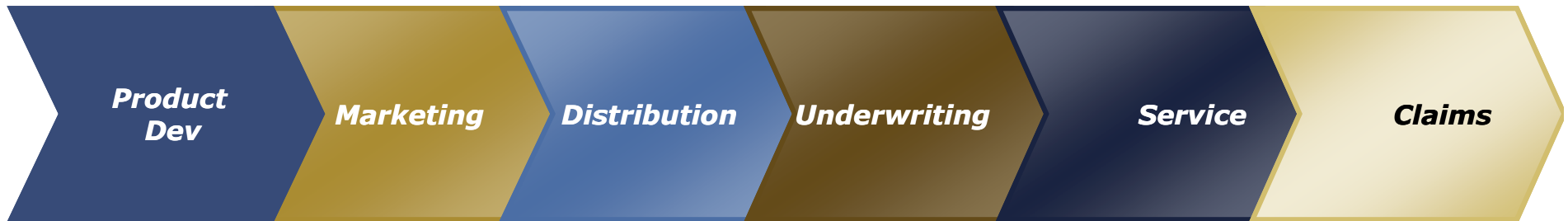
More Information

Moving Faster

In New Ways

Product Development

Typical

- Tiered rating
- Internal data analysis combined with industry loss cost

Newer

- Rules/tools-based product development systems
- Expanded product set – e.g. disappearing deductibles, loss forgiveness, green
- Electronic ISO/Bureau support, Pay as you go
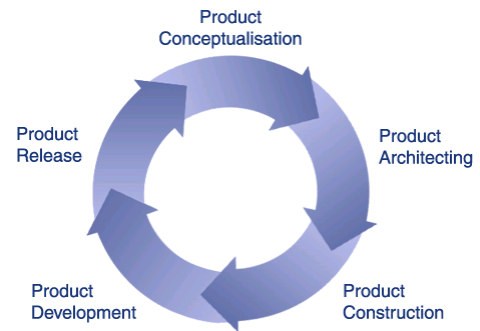
Cool

- Predictive Analytics / Scoring Models in rating
- Multi-variate rating, Micro-segmentation
- Pricing based on policyholder behavior or actual risk
- Massive amounts of data available to carriers that collect it and have processing power to evaluate it.
- Continued growing adoption of innovative product features as baseline products become more commoditized
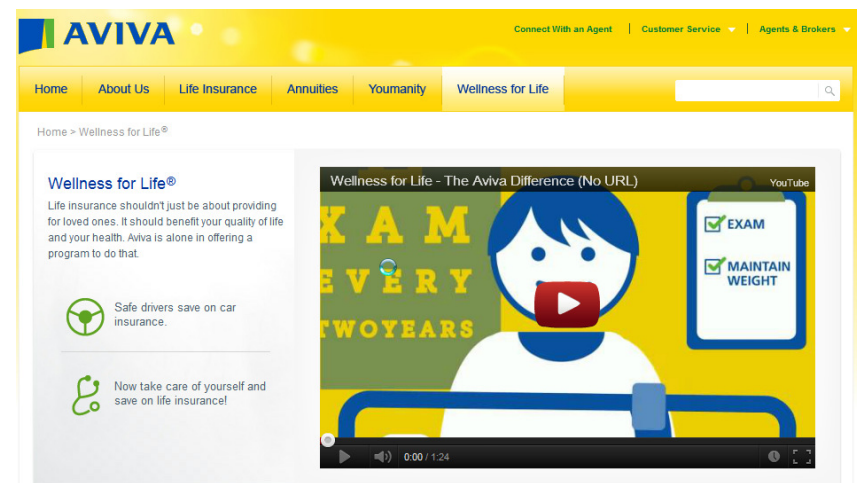

Product Conceptualisation

Product Architecting

Product Construction

Product Development

Product Release

MILES TRAVELLED 1490

INSURANCE RATE 12.50

Behavior based products
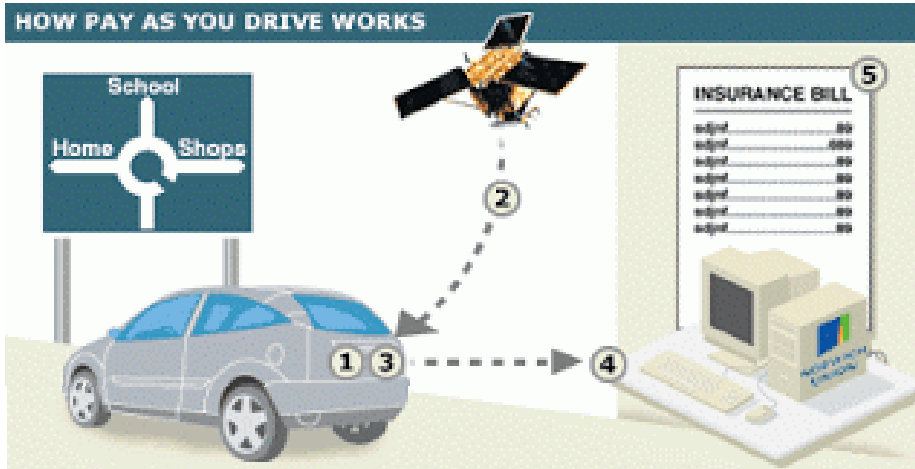
Drive better – Pay less

Get discounts by participating in wellness programs.

Liberty Mutual Insurance

- Onboard Advisor is a commercial lines usage based insurance product by Liberty Mutual.

- It offers up to 40% discount to commercial and private fleets based on how safe they actually drive.

- It also offers a set of tools for assisting fleet owners to improve safety as well as reduce fuel consumption and other operational expenses. The program bundles several solutions for increased value add to customers:

  - Performance Advisor (insurance and safety monitoring part) is provided by Sensomatix

  - Mobile Advisor (fleet monitoring part) is provided by General Electric, and

  - Fuel Advisor (fuel card application) is provided by Voyager/US Bank.

Distribution

Typical

- Sales reps, Agents
- Portals with web-based app submission (and other transactional capabilities)
- Traditional & web-based media
- Comparative raters

Newer

- Real Time Rating and Data exchange
- Multiple technology channels

Cool

- Social Media for recruitment and distribution communication
- Analytics for Distribution management, Mobile Dashboards
- Continued shift in channel, multi channel
- Complete agent desktop on a mobile device
- Agent owned Customer Transactional Websites

Marketing

Typical

- Traditional & web-based media
- Online agencies/ aggregators/direct to consumer online sales

Newer

- Social
- CRM revisited (SFA and Single view of customer)

Cool

- Social Media for recruitment, distribution communication brand building and lead generation
- Mobile apps
- Sophisticated product recommendation tools
- Emotion detection sales aid for phone sales
- Multi-channel future, more engaging consumer experience across all channels
- Micro-segmentation
- Gamification

Mobile apps for branding and education/demand generation and often tied to a social media campaign.
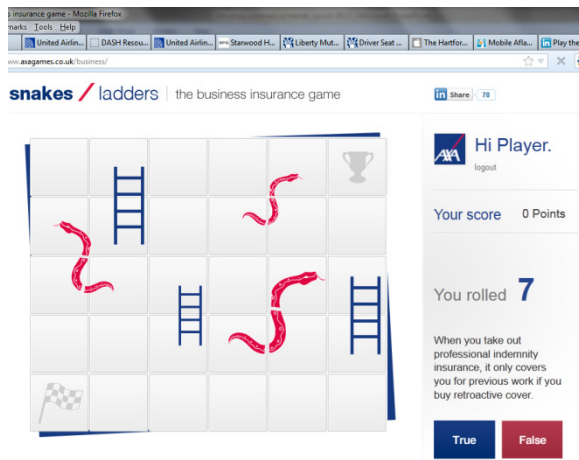
AXA Snakes and Ladders to see how aware you are of what protection you need for your business

Zurich Insurance has a "Going Global?" app that allows people to identify risks inherent in operating in other countries.

Underwriting

Typical

- Combination of customer provided data and third party external data
- Combination of business rules and underwriting judgment
- Automated underwriting only for the most standard lines (personal auto)

Newer

- Fully automated underwriting – for slightly more complex lines BOP, WC)
- Easily changed automated UW rules
- Real time status updates
- Pre-fill forms - third party data
- Increased collaboration

Cool

- Analytics/ scoring driving risk acceptability and pricing
- Analytics to selectively order the third party data needed (e.g. MVRs, medical records)
- Automated underwriting for most complex lines (middle market, specialty)
- Social media analysis

Growing Use of "Big Data", i.e. Volumes, Variety, and Velocity Beyond the Capabilities of Traditional Data Mgt

Use of Big Data Elements by P&C Insurers (n=48)
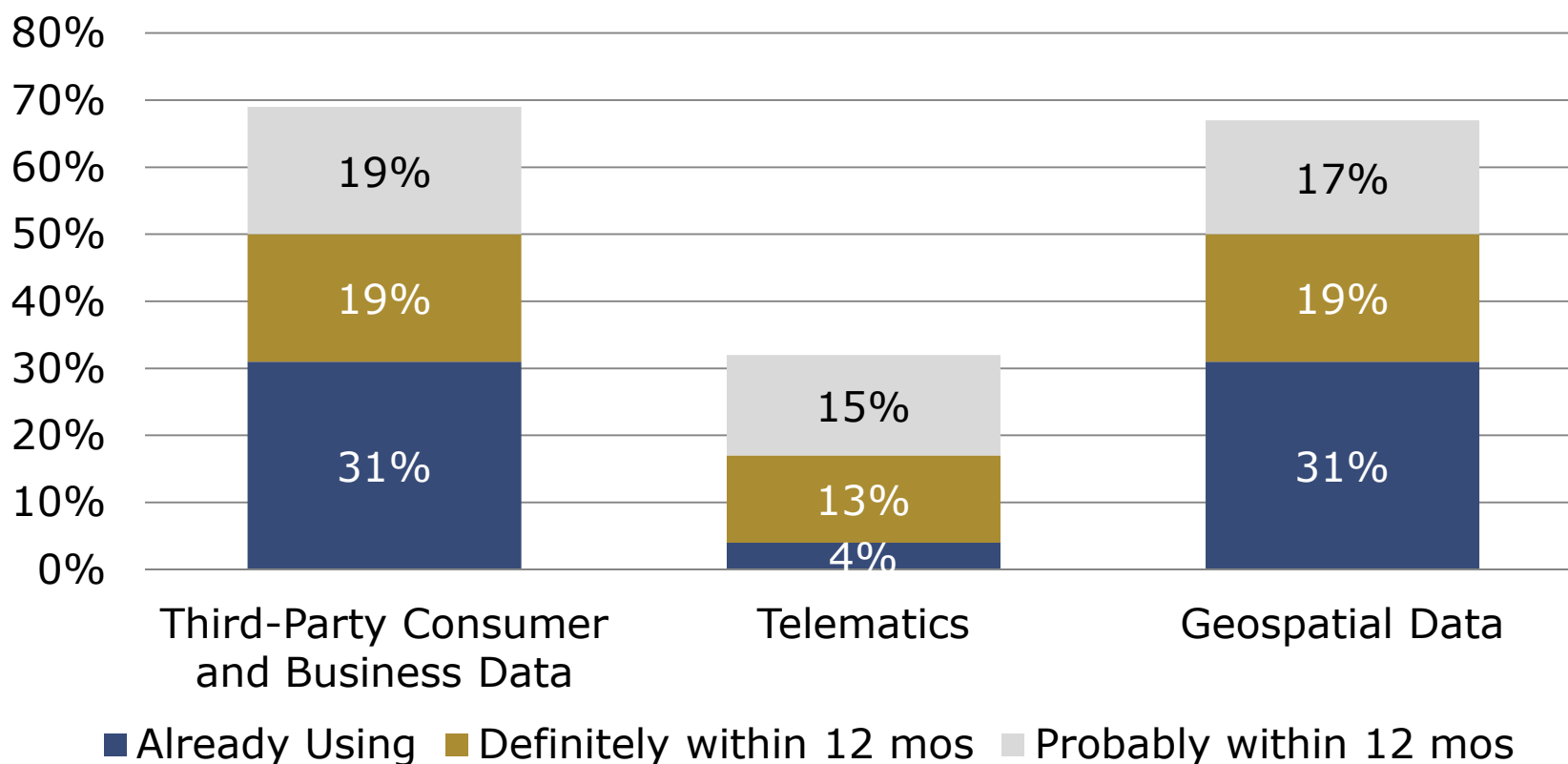
Shift in Resource Allocation and Locus of Advantage. Gathering becomes easy. Analyzing becomes hard.
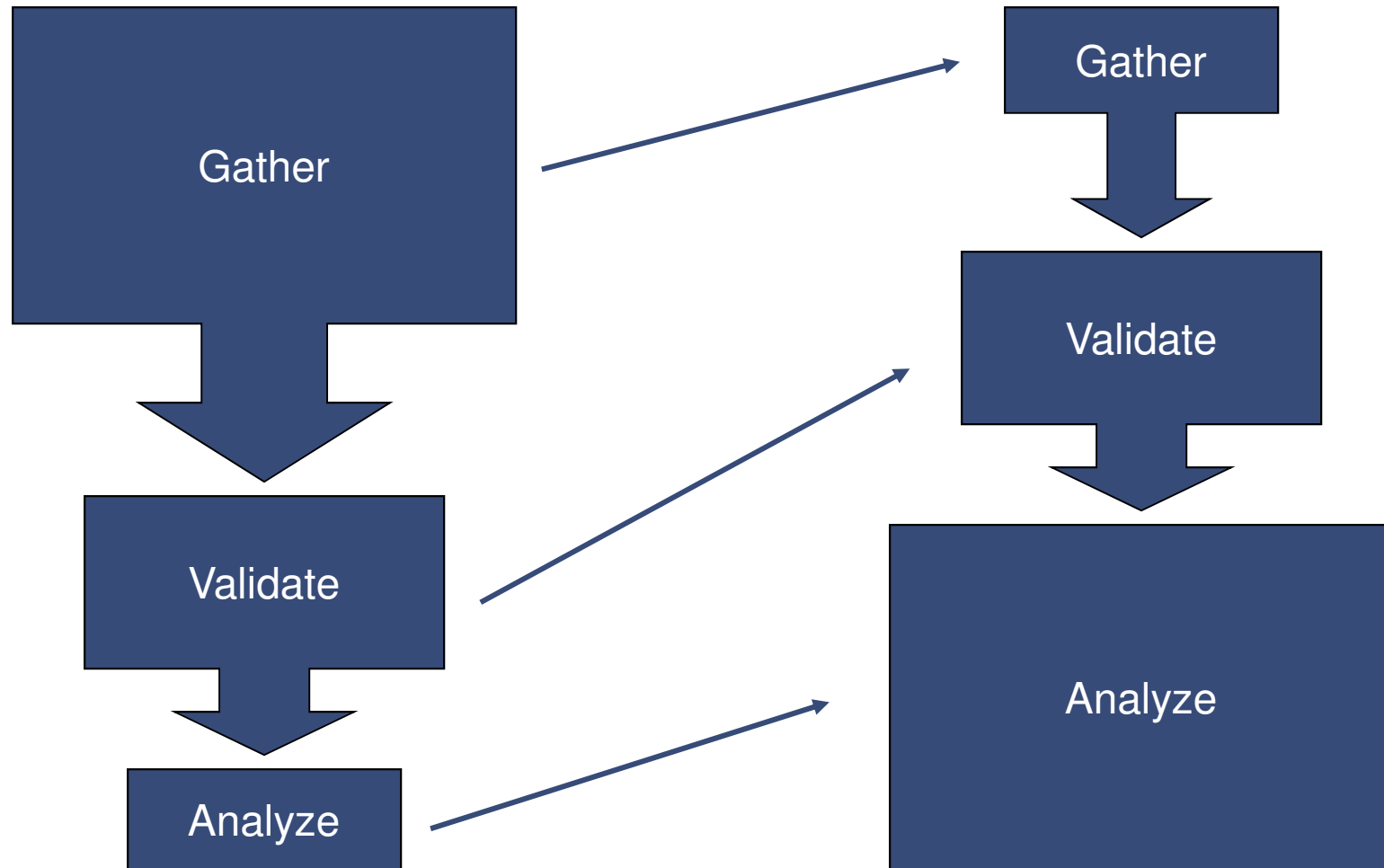
Data Visualization becomes critical as more data becomes available

Image sources: www.sas.com, www.businessweek.com, www.hpi.org.uk,

And Predictive Modeling Plays a Key Role

- Standard, purchased predictive scores: Scores (indicating the likelihood of something happening) that are calculated and acquired externally, such as credit score, social media score, wind-hail location score, etc.

- Custom proprietary predictive scores: Predictive models developed specifically for a carrier based on internal and external data and specific characteristics of their appetite, geography, regulatory environment, and book.

- Predictive risk models can improve underwriting consistency, transparency, automate segments of the underwriting process, and ensure that the right underwriter sees the right submissions, all the while driving overall book profitability.

- Underwriting Models are to:

  - Indicate fit with appetite

  - Calculate rating factors

  - Assign work to UW

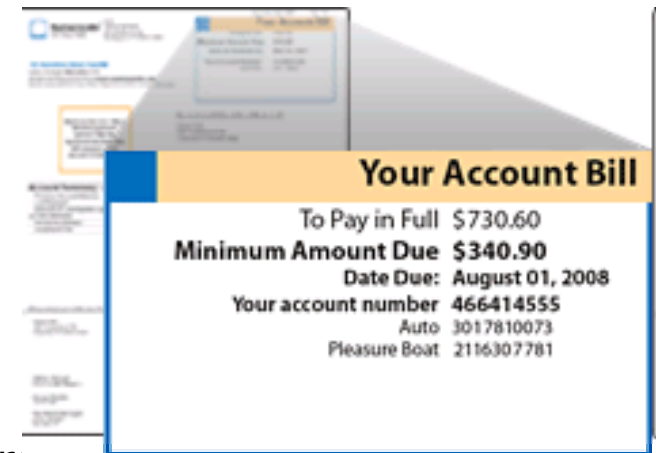 - Select properties for inspection

Service

Typical
- Carrier/agency provided services
- Snail mail and paper based

Newer
- Online Self-Service (e.g. epolicy delivery)
- Enhanced Billing Options (credit cards, flex. billing dates)
- Online risk management information/loss control
- Catastrophe Planning/Services
- Proactive catastrophe notification via SMS
- More communication options, including online chat, secure e-mail

Cool
- Mobile apps
- Text messages updating clients on claims, bill, renewals
- Bill pay via photo
- Facebook applications
- Call center personality matching based on social data
- Caller emotion detection
- Social Monitoring

Your Account Bill

To Pay in Full	$730.60
Minimum Amount Due	$340.90

Date Due: August 01, 2008
Your account number 466414555
Auto 3017810073
Pleasure Boat 2116307781

Claims

Typical
- Manual process, carrier responds and handles
- Laptops, tablets, smartphones with GPS capability
- Mapping tools

Newer
- Online claims status
- Wireless claims tools – including consumer
- Mobile check-writing capability
- e-signature solutions for a mobile device
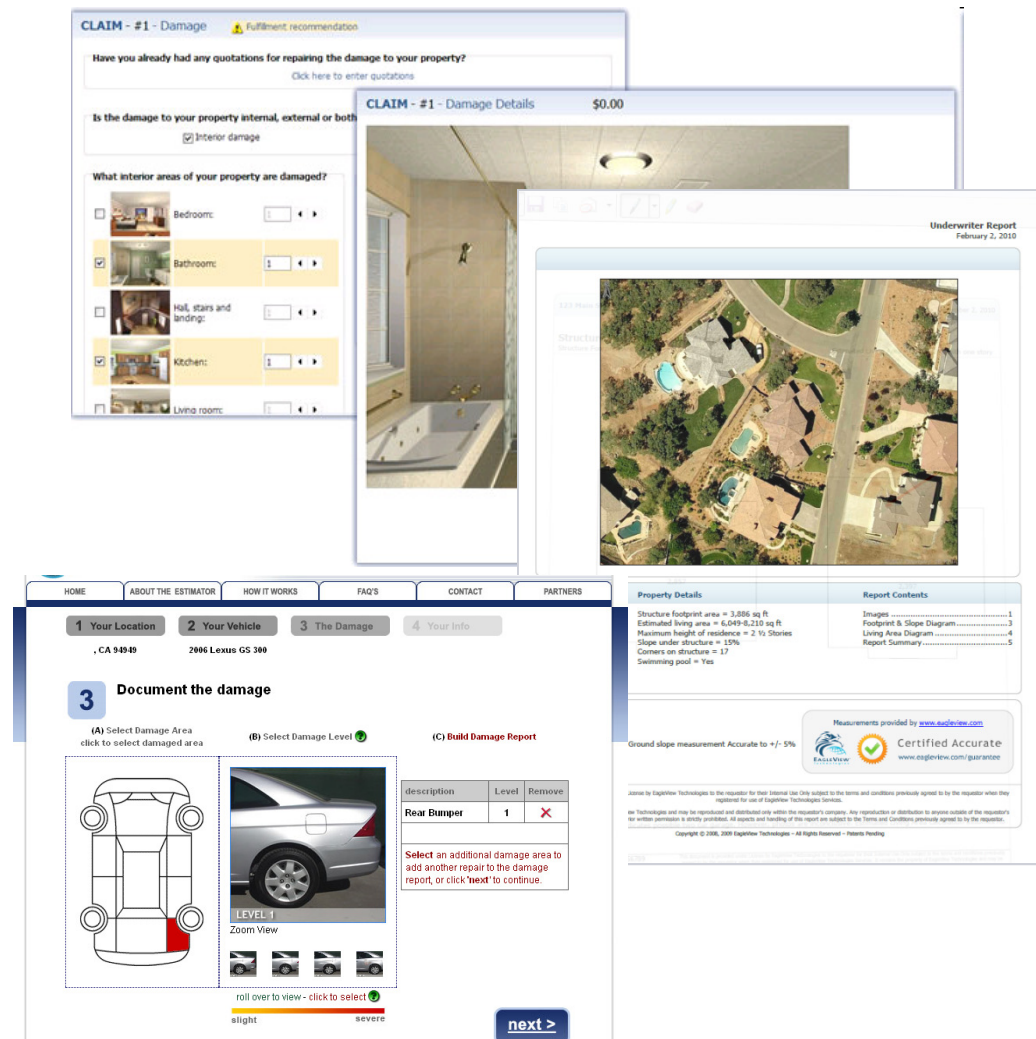- Location based advice during FNOL

Cool
- STP
- Proactive claims contact
- Payment cards
- Consumer collaboration

Estimatics

Not just for compliance anymore

- Mobile apps

- 3D diagramming

- Satellite imagery

- Decision support wizards

- Business process collaboration

- Consumer collaboration

- Repair webcams
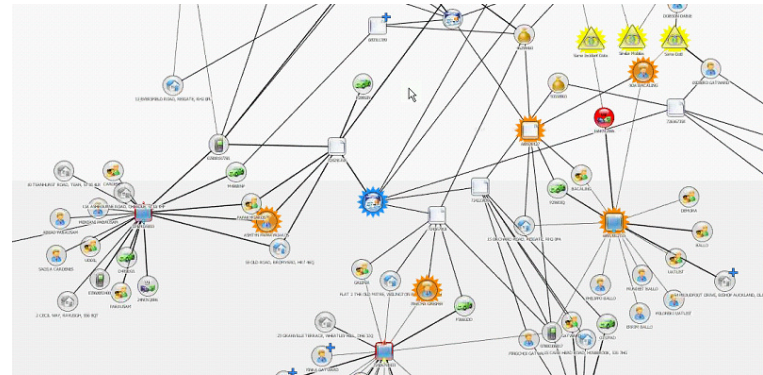
- Optical recognition

Fraud Trends

Typical
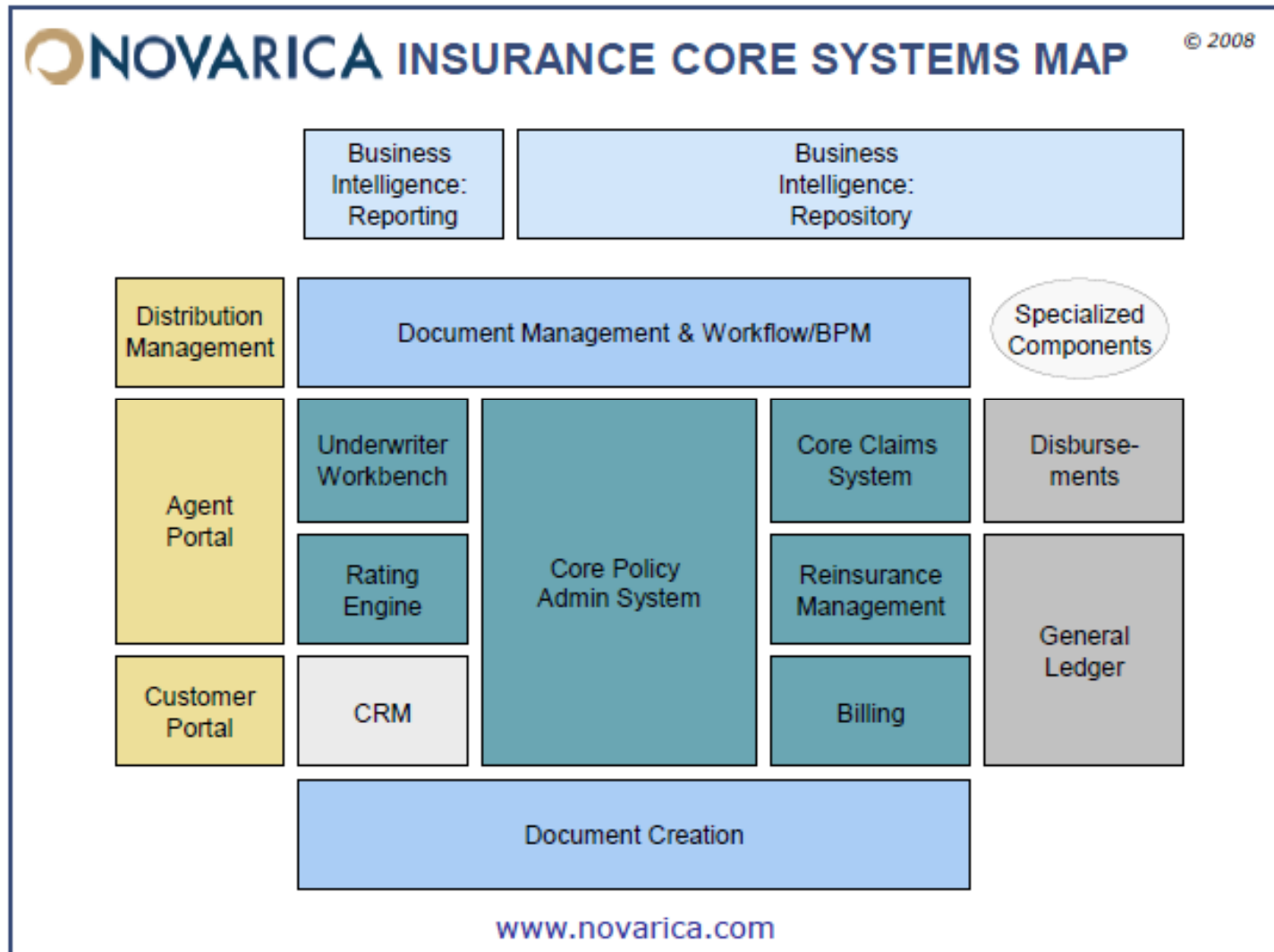- Manual red flags
- Business rules based analysis

Newer
- Automated red flags
- Analytics - scoring
- Structured data mining
- External databases
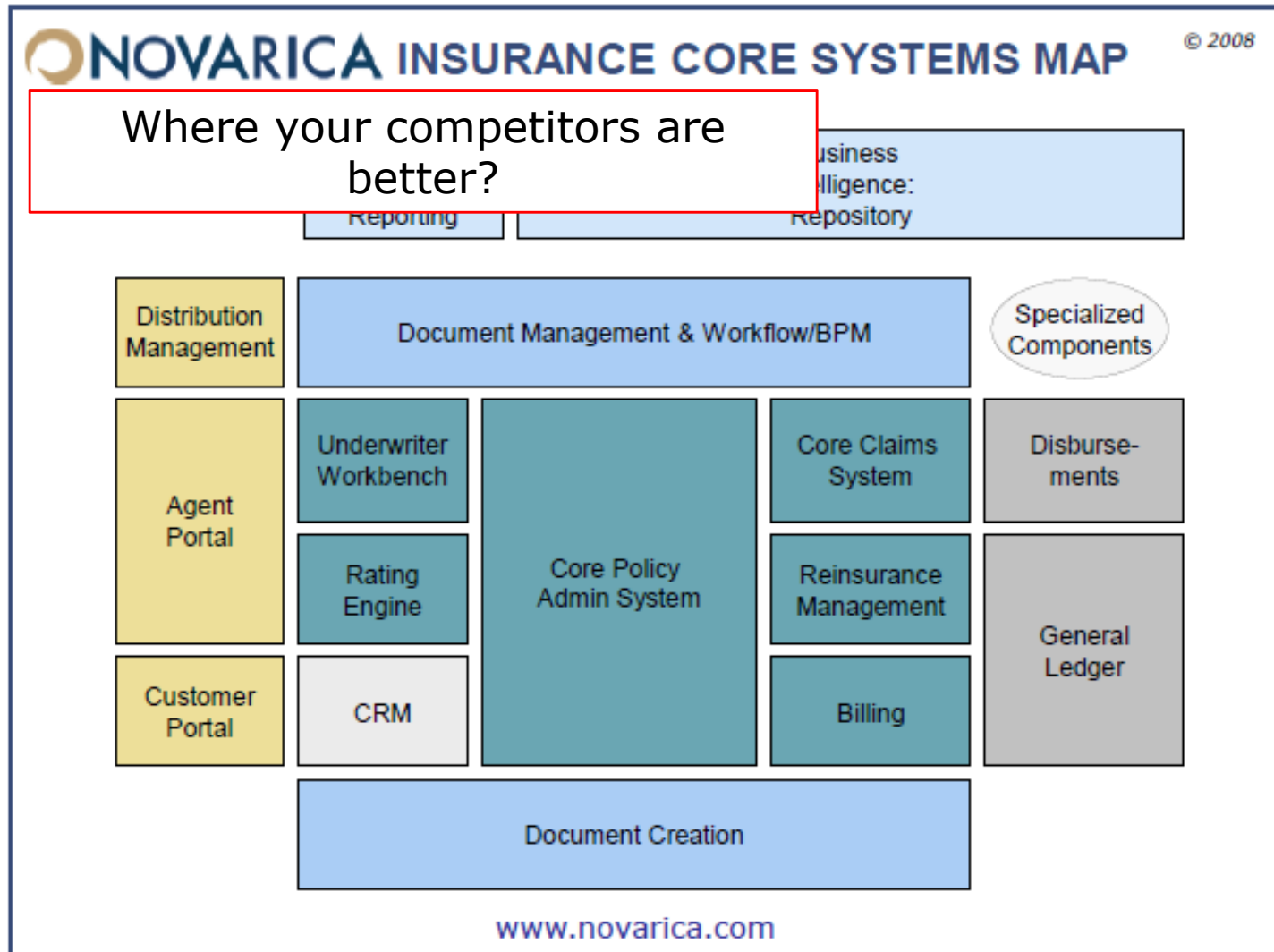- Geographic data mapping
- Social Media

Cool
- Network link analysis
- Voice stress recognition software
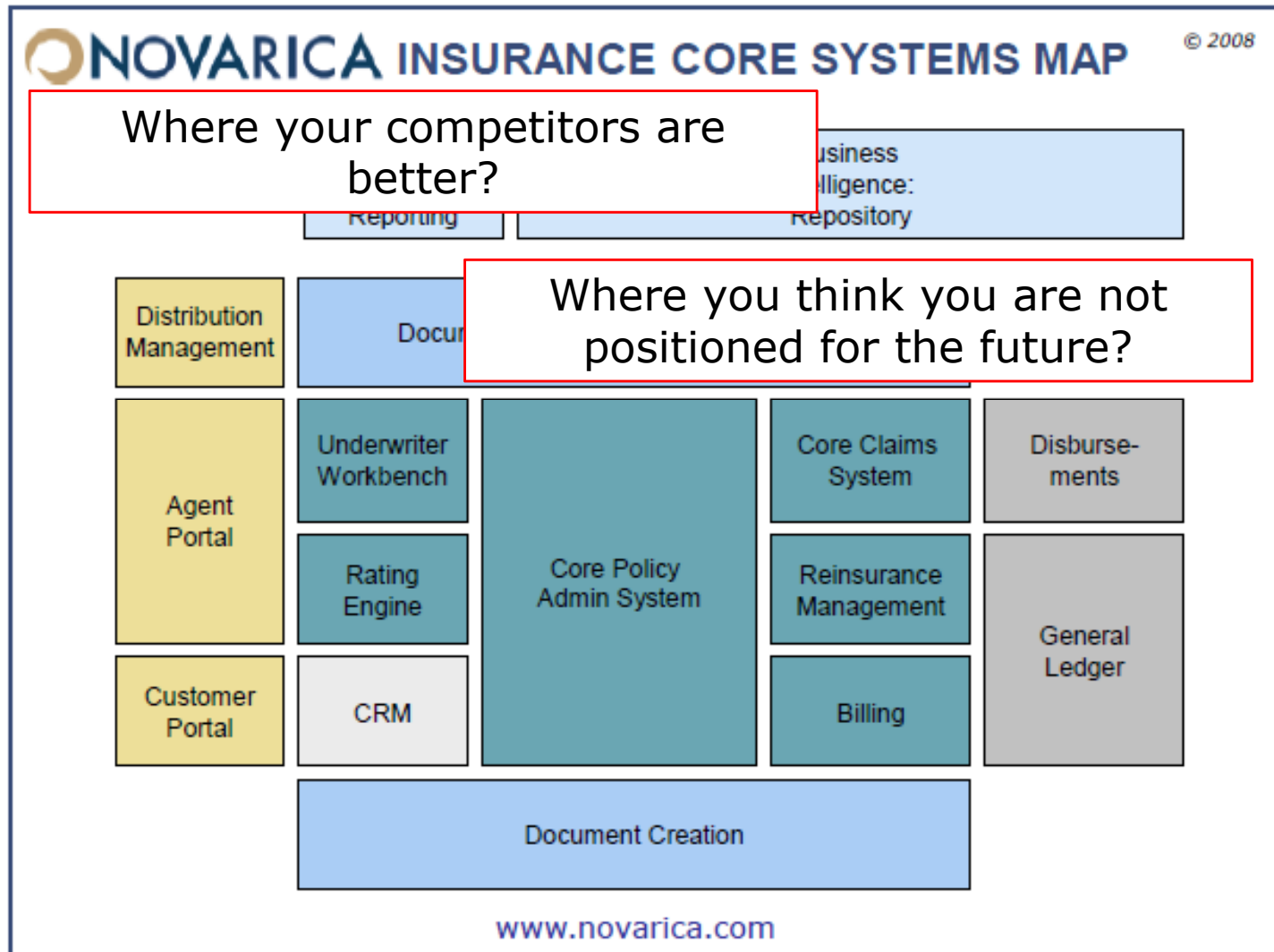- Unstructured claims data analysis
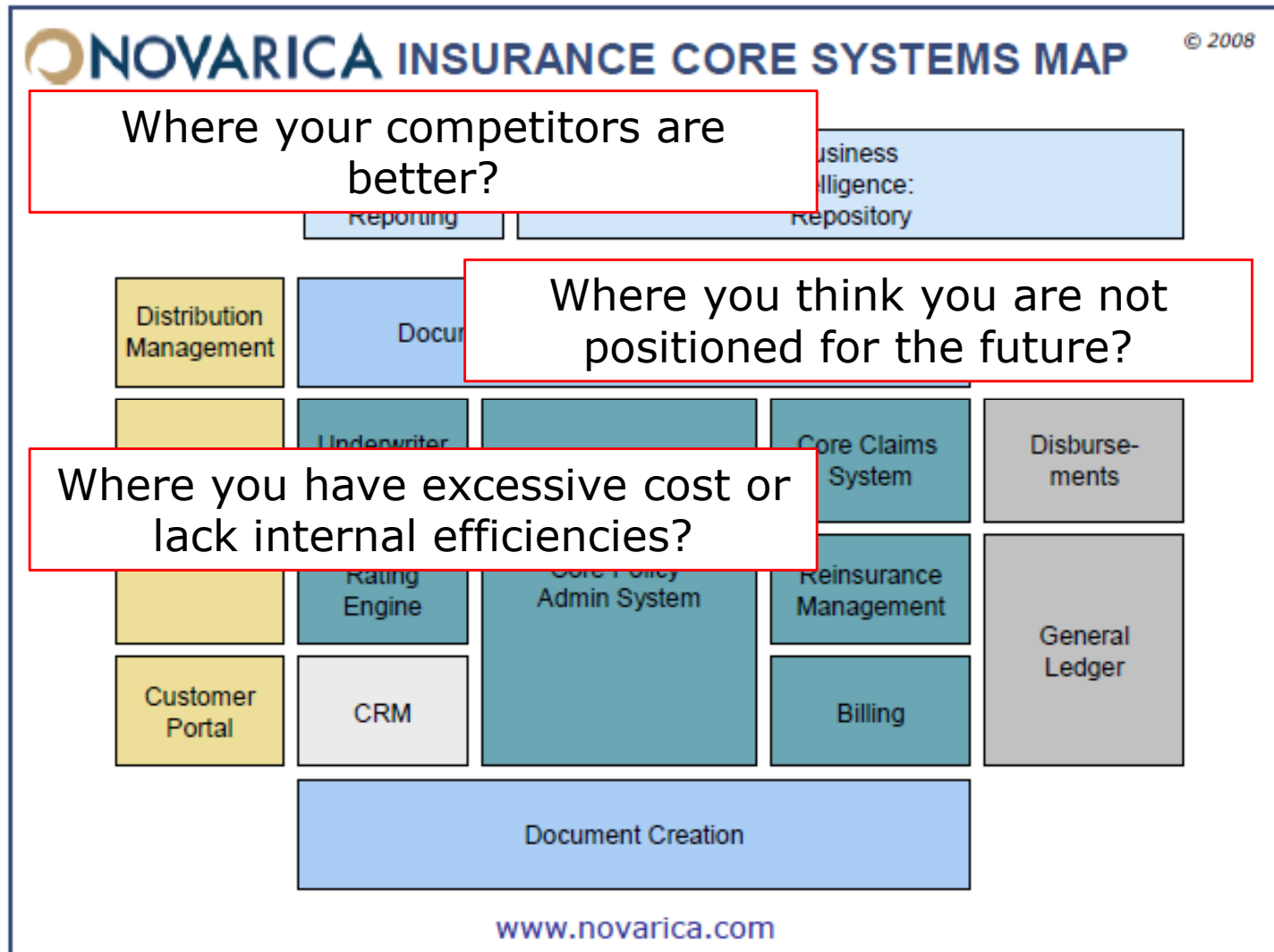- Predictive modeling

So where do you invest???
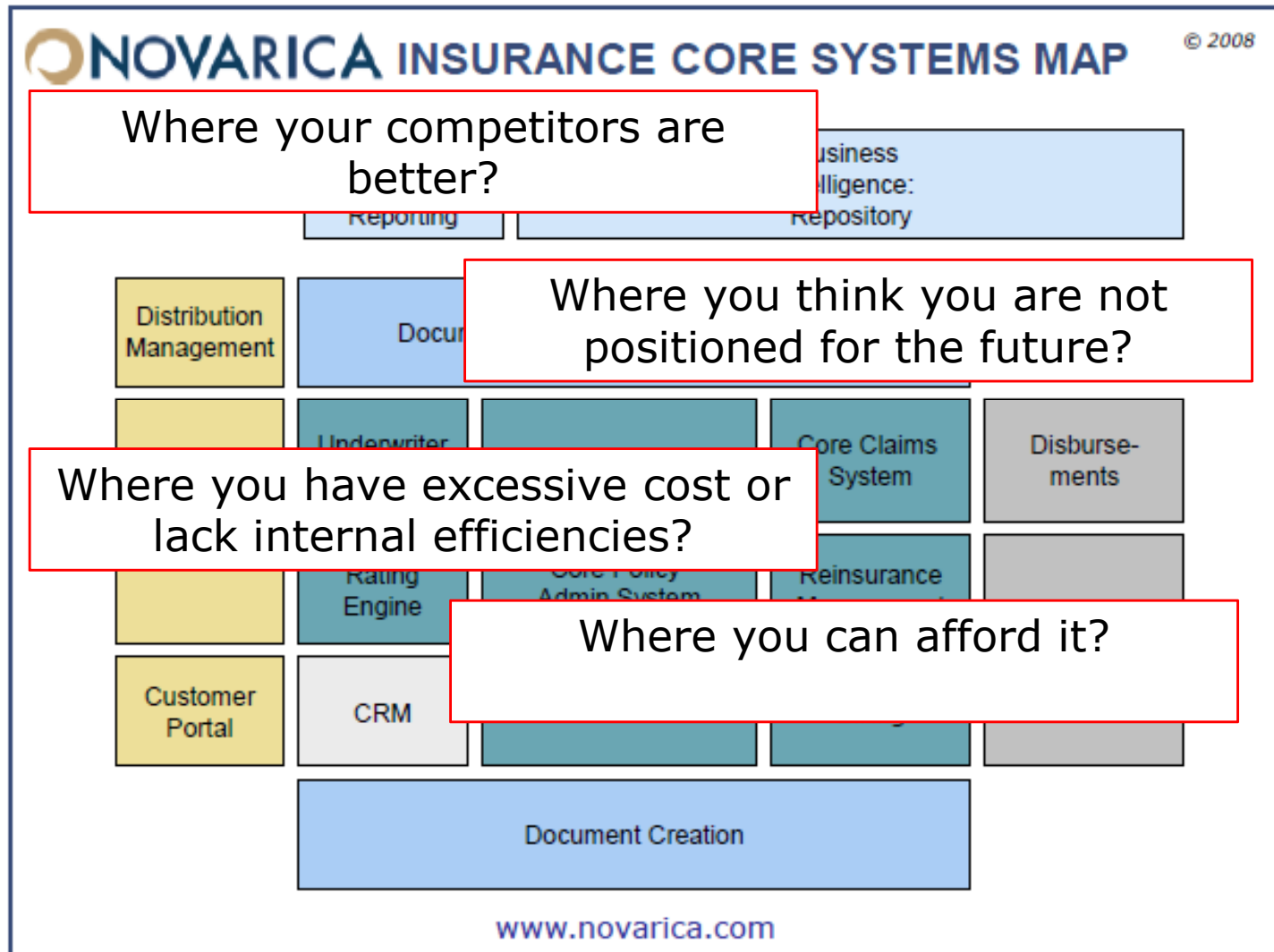
So where do you invest???

NOVARICA INSURANCE CORE SYSTEMS MAP © 2008
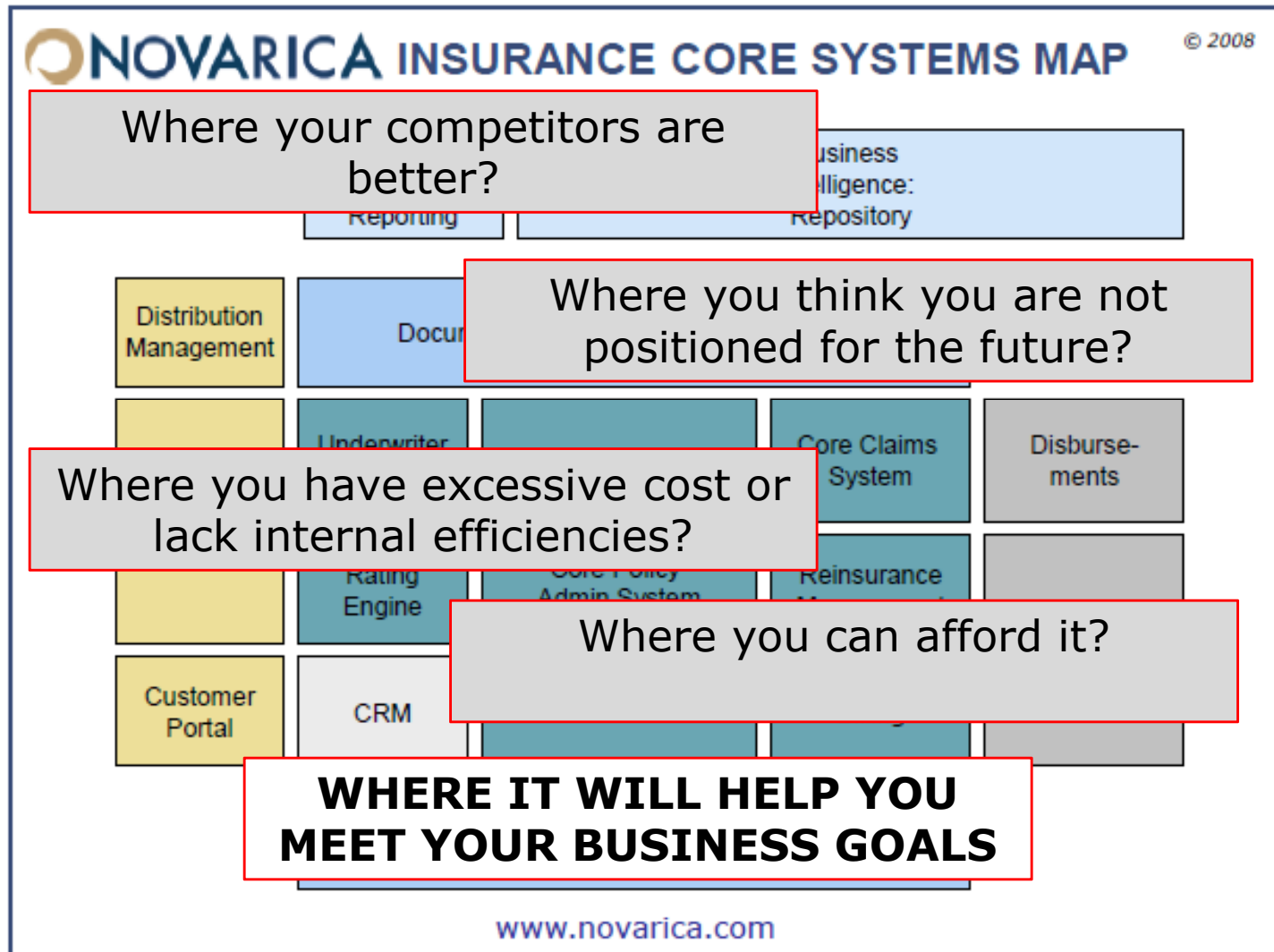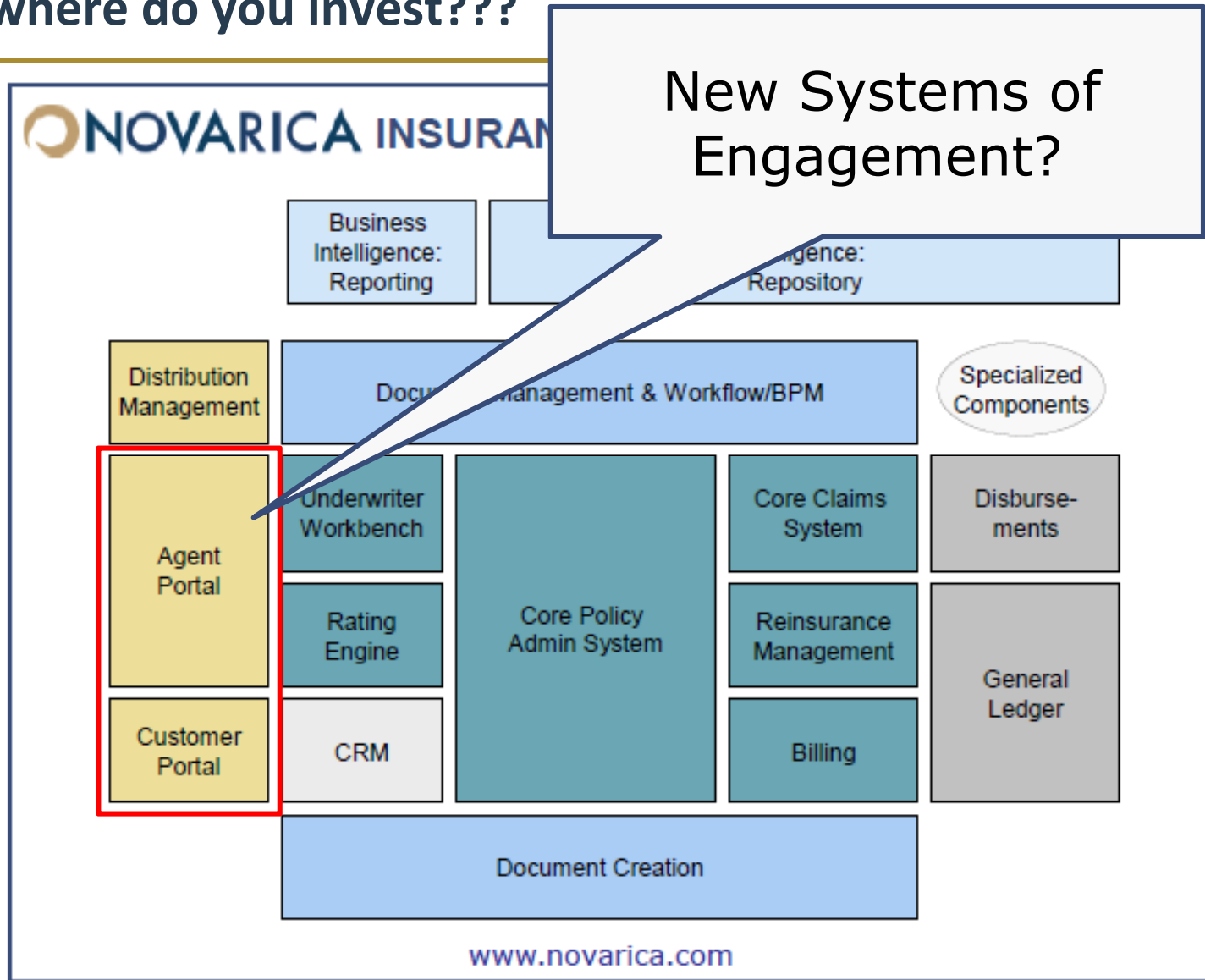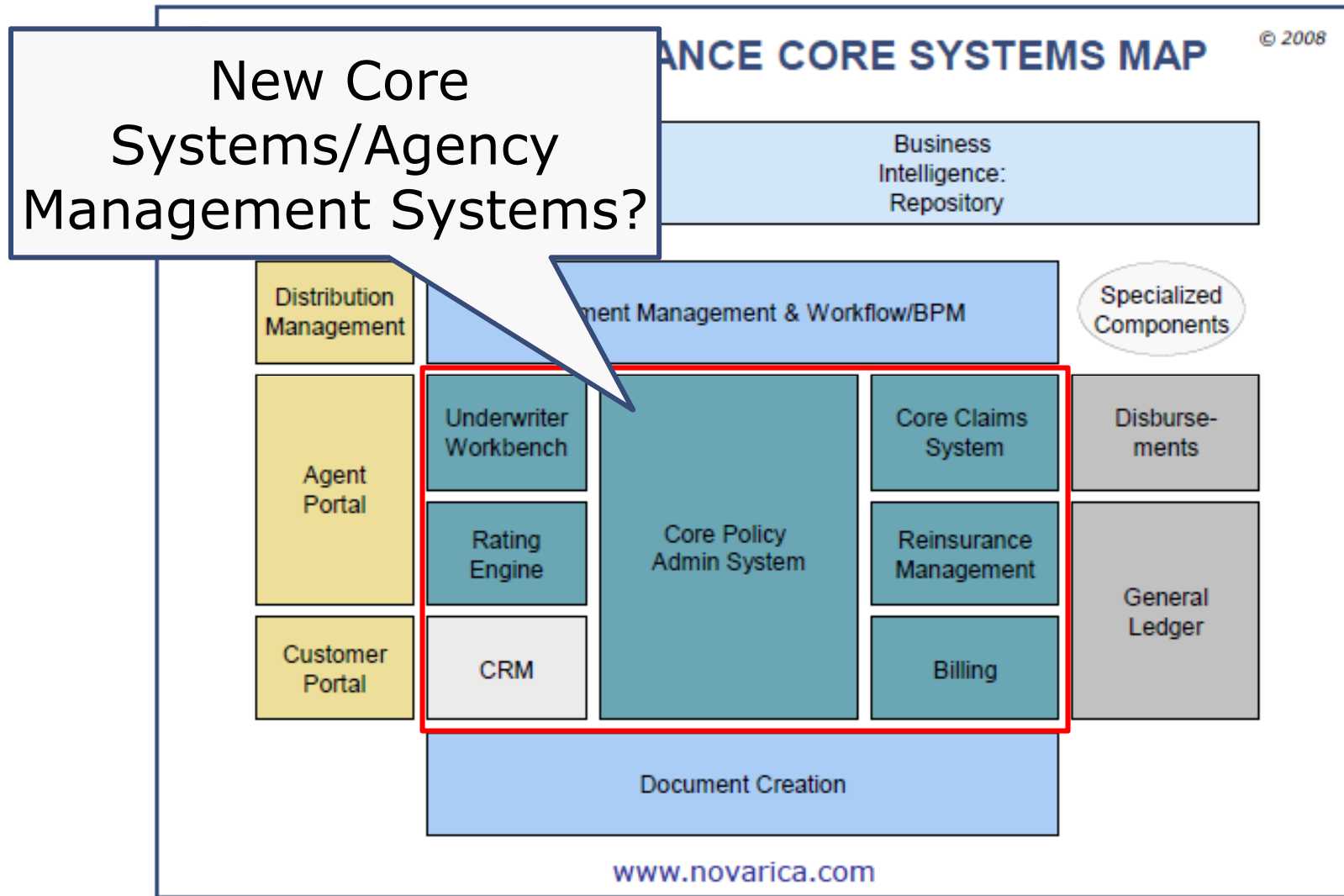
Where your competitors are better?

So where do you invest???

So where do you invest???

So where do you invest???

So where do you invest???

So where do you invest???

So where do you invest???

New Core Systems/Agency Management Systems?

INSURANCE CORE SYSTEMS MAP © 2008

- Business Intelligence: Repository
- Distribution Management
- Document Management & Workflow/BPM
- Specialized Components
- Agent Portal
- Underwriter Workbench
- Core Claims System
- Disbursements
- Rating Engine
- Core Policy Admin System
- Reinsurance Management
- Customer Portal
- CRM
- Billing
- General Ledger
- Document Creation

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So where do you invest???
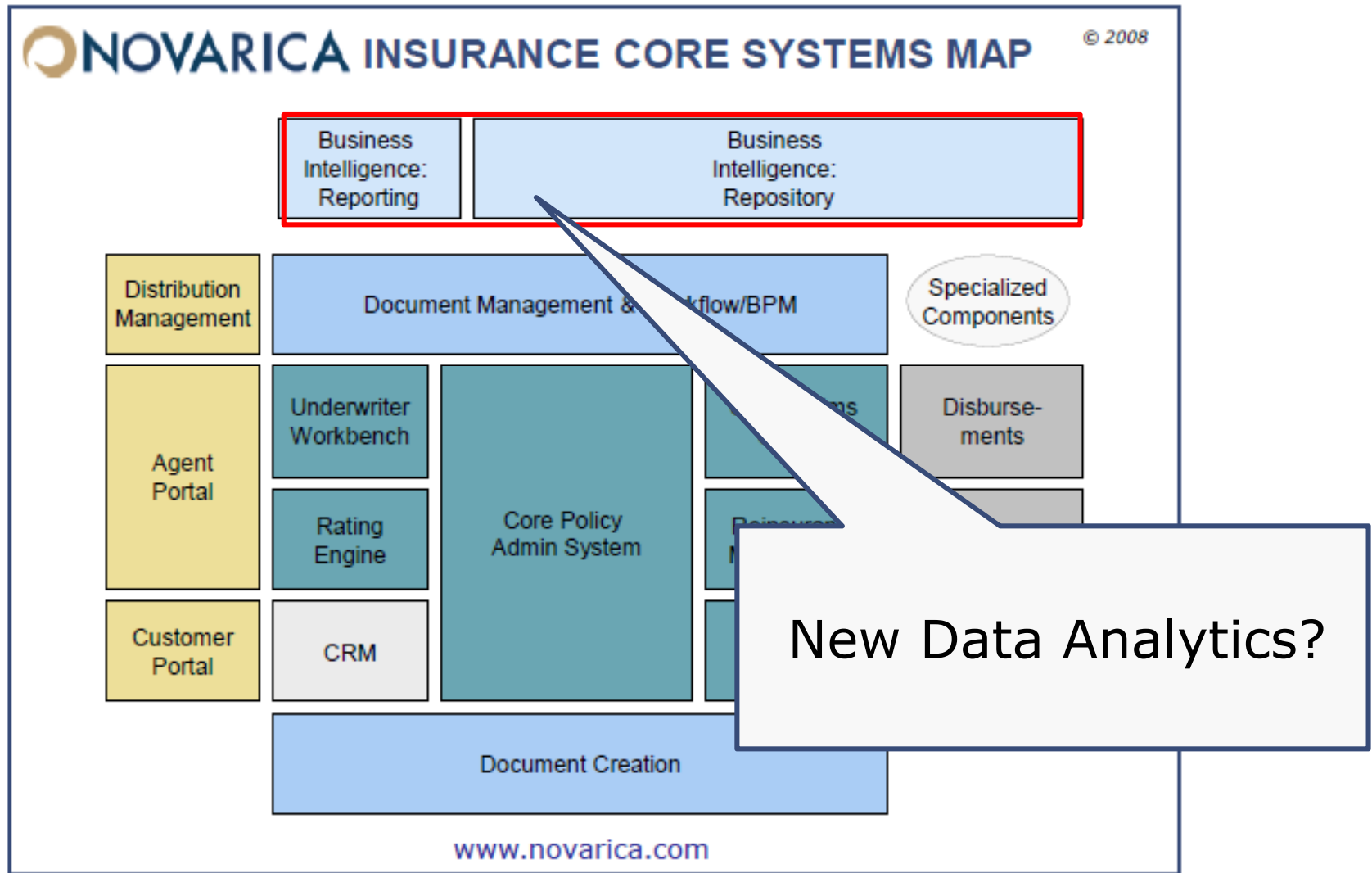
Vendor Selection Process

Weeks 1-3 | **Weeks 4-x** | **Weeks x -y** | **Weeks y-z**

Requirements Gathering and RFI Short listing

Gather high level Requirements
Analysis of Requirements

RFI Issuance

RFI Development Issuance, Response and Scoring

RFI Creation, Distribution, Collection of Responses, RFI scorecard

Demo Agenda/Script Issuance

Vendor Demos And Assessment

Creation of Agenda and Demo scripts
Presentations and Directed Demos, References

Feedback, Analysis and Recommendations

Demo Scorecard, Team Debriefings
Final recommendation preparation

Presentation of Recommendations

Proactively Plan and Leverage Technology to Avoid.....

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