MARSH

How To Drive Actionable Intelligence On The Big Data Journey

October 15, 2015

MARSH & McLENNAN COMPANIES

Today's Host

MAC D. NADEL

National Retail/Wholesale,
Food & Beverage Industry
Practice Leader

Marsh

- Experience spanning a range of additional industries including both risk management and middle market clients.
- Speaker at various industry risk management conferences.
- Named "power broker" by Risk and Insurance magazine.

Today's Panelists

Dena Abdallah

Director,
Risk Management

US Foods

- Over 22 years experience in the claims management industry.
- Manages the oversight of all claim related activities.
- Serves as a knowledge leader, working with US Foods's functional areas to identify and minimize claims losses while managing the loss portfolio associated with employee safety, workers compensation, general, auto and product liability.

Joseph Lee

Executive Director,
Global Retail, Food &
Beverage Leader

Marsh ClearSight

- More than 14 years of experience with Marsh ClearSight (formerly STARS) in various client facing roles.
- Manages global operations in addition to industry practice leadership.
- Thought leader in RMIS technology and its application to global organizations.
- Featured speaker at RIMS and IASIS on emerging risks in technology transformation.

Today's Panelists

Steven Jones

Senior Vice President

Marsh Global Analytics

- 15+ years experience assisting clients plan, deliver and manage information management, data warehouse, business intelligence and analytics programs.
- Responsible for communicating Marsh's analytics capabilities externally.
- Works with clients to define goals, requirements and help facilitate the execution of the analytics process.

Jenny Nelson

Vice President and Principal Account Executive

Marsh ClearSight

- 10 years of experience with Marsh ClearSight (formerly STARS) in various client facing roles.
- Responsible for the overall relationship of her clients.
- Serves as an escalation and solution point, advocates for her clients, and works closely and collaboratively with Service and Product Teams to meet client goals.

Today's Agenda

- The Evolving Role of the Risk Manager
  Joseph Lee (Marsh ClearSight)

- Managing the Mountain of Data
  Dena Abdallah (US Foods) and Jenny Nelson (Marsh ClearSight)

- The Application of Business Analytics
  Steven Jones (Marsh Global Analytics)

- Real-Life Examples
  Dena Abdallah (US Foods) and Jenny Nelson (Marsh ClearSight)

- Questions & Conclusion

How To Drive Actionable Intelligence on the Big Data Journey

- How strategic do you believe your organization considers the Risk Management role?

    – Very ... we are engaged across the enterprise and provide appropriate input to the C-Suite for decision making.

    – Somewhat … we have some limited partnerships and strategic input within the company, but still are too often an "afterthought" in our operations.

    – Not there yet … we've got some work to do to elevate our relevance and be viewed as more than just the purchasers of insurance for the company.

The Evolving Role of the Risk Manager

- Growing role in an evolving industry.

- Rise of technology.

- Growth of ERM.
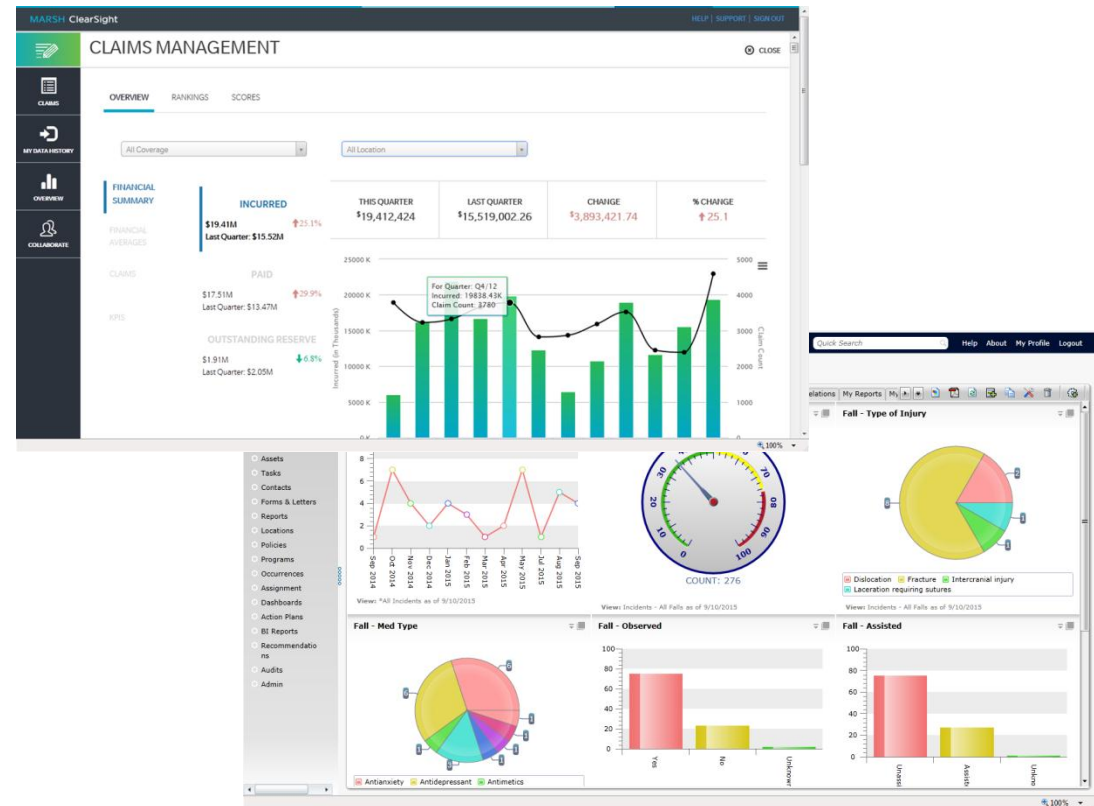
The Evolving Role of the Risk Manager

Growing role in an evolving industry

- Increasing scope and responsibilities.

- Much more strategic role.

- Enabler for controlled, strategic growth.

- Educator to non-risk management colleagues.

The Evolving Role of the Risk Manager

Rise of Technology

- Availability of data.

- New real-time tools and analytics.

- Emerging risks.

The Evolving Role of the Risk Manager

Growth of Enterprise Risk Management

- The strategic risk manager.

- The functional group peacekeeper.

- Questioning the status quo.

How To Drive Actionable Intelligence on the Big Data Journey

- How would you characterize the type and value of your risk management data?

  - Data Rich ... we efficiently collect our data from multiple sources and use it as a decision support tool for our risk management program.

  - The Basics … we mostly use our data to manage and keep track of claims and losses.

  - Overwhelming … we get lots of data from lots of feeds and inputs, but are probably only scratching the surface in how we leverage it.

Managing the Ever-Growing Mountain of Data

- TPA/Carrier: claim information, financials, adjuster notes.

- Safety/OSHA: incidents, OSHA severity.

- Legal systems: claim legal payment data.

- HR system: employee details.

- Fleet system: first party auto, vehicle information.

- Broker feed: policies, values, claims.

Next Steps in Utilizing The Data

- Aggregate key data elements.

- Validate data – checks and balances to ensure accuracy.

- Understand what is meaningful for your organization.

- Design reports to look at KPIs.

- Identify critical trends.

- Implement risk mitigation programs.

How To Drive Actionable Intelligence on the Big Data Journey

- Gee, I'd really like us to be able to use our own and industry data to (pick your top choice):

    – Help make informed decisions on how to best quantify and treat specific risks.

    – Quantitatively understand our company's ability to bear risk.

    – Help inform the overall business strategy of my company.

    – Allow us to "optimize" our insurance program (get the best "bang for the buck").

The Application of Business Analytics

Excellence in Risk Management Survey Findings
Use of Data and Analytics

2013
74%
said their organizations need to conduct deeper analysis on their risk-related data.
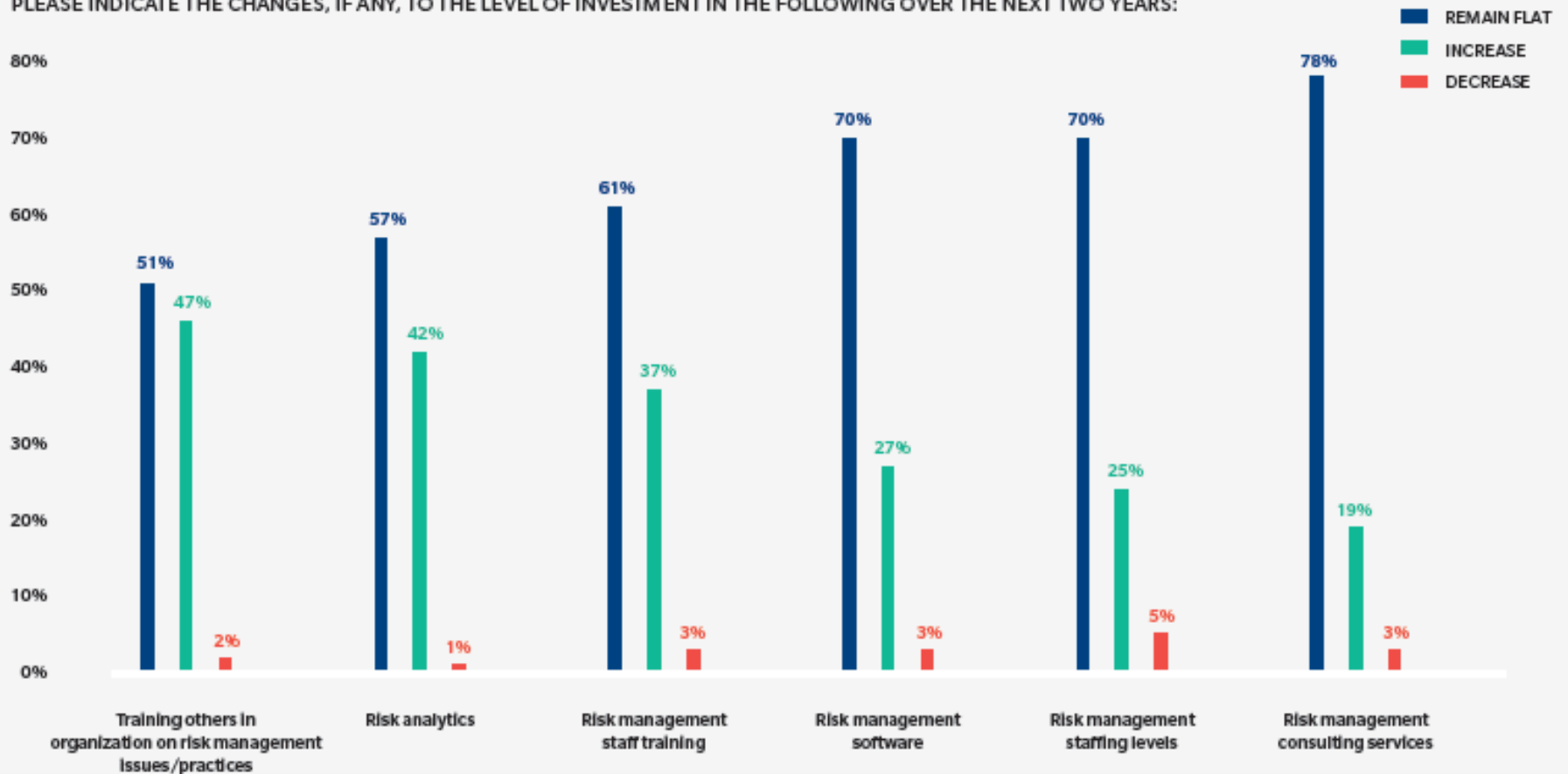
2015
44%
said that their senior leaders were aligned regarding the analytics needed to make key risk decisions.

2015 *Excellence in Risk Management* Survey
Investments in Data & Analytics

FIGURE 2   Investment in Risk Management

PLEASE INDICATE THE CHANGES, IF ANY, TO THE LEVEL OF INVESTMENT IN THE FOLLOWING OVER THE NEXT TWO YEARS:

Legend:
- REMAIN FLAT
- INCREASE
- DECREASE

Training others in organization on risk management issues/practices: 51% / 47% / 2%
Risk analytics: 57% / 42% / 1%
Risk management staff training: 61% / 37% / 3%
Risk management software: 70% / 27% / 3%
Risk management staffing levels: 70% / 25% / 5%
Risk management consulting services: 78% / 19% / 3%

2015 *Excellence in Risk Management* Survey
Use of Data and Analytics

MY ORGANIZATION WOULD BENEFIT BY IMPROVING ITS USE OF
DATA AND ANALYTICS IN THE FOLLOWING AREAS*

Area	Percentage
Quantifying risk	39%
Identifying risk	34%
Risk reporting to the board and other stakeholders	30%
Understanding risk tolerance	28%
Understanding organization's risk-bearing capacity	27%
Developing risk action plans	27%
Optimizing risk financing and insurance programs	26%
Informing and supporting strategic risk decisions	25%
Informing decisions on specific risks	24%
Identifying supply chain vulnerabilities	15%
Other (please specify)	3%

*Respondents were allowed to choose three from the list.

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Key Questions for Risk Management
Big Data and Analytics Can Help Answer

1. How much risk can the company tolerate?

- What are the company's sources of capital and how do you prefer to deploy those resources to deal with unexpected losses?

2. Is the company adequately protected against risk?

- Are the company's limits and deductibles appropriate?
- Does the insurance structure reflect corporate risk tolerance?

3. Is your insurance an efficient use of the company's capital?

- Cost of retaining risk vs. cost of transferring risk (premium)?
- Whose capital is cheaper, the company's or the insurance carrier's?

Applying a Decision Framework to Reduce Costs

Marsh Analytics Evolution
Increased Decision Support

Stochastic Modeling (iMAP)

Loss Distributions

Risk Tolerance

LOB or Enterprisewide Perspective
On Retained Loss Positions

Deterministic Modeling

Structure Analysis

Carrier Level Sophistication Around
Experience and Exposure Rating

Predictive Pricing

Benchmarking

Limit, Retention
and Pricing Comparatives

BENCHMARKING

ACTUARIAL
POINT ESTIMATES

iMAP

Define your Corporate Risk Tolerance
Three Perspectives

Earnings Miss The Equity Holders' View	Private Equity The Investors' View	Key Performance Indicators (KPIs) Qualitative View

• Estimates the volatility built into earnings estimates.
 	
• Arrives at an earnings miss that might cause a drop in share value.
 	
• Typically discounts intangible assets.
	• Desire to minimize purchase price adjustments.
	
	• Emphasis on allowable % of TVPI.
	
	• Flexibility around timing of earnings misses.
	
	• Holding period longer than typical public company investor.
		• KPIs are selected from:
		  – Balance sheet.
		  – Income statement.
		  – Access to other funds.
		
		• Flexibility allows for reflection of company culture.
		
		• Appropriate for private companies.

Exploring Loss Potential
Client and Proprietary Loss Data Library

KEY INPUTS

1. Inclusion of Company individual loss data
2. Use of proprietary Marsh Global Loss Data Library
3. Additional scenario engineering for hard-to-measure loss events

OUTPUT →

RETAINED LOSS   **INSURED LOSS**   **UNINSURED LOSS**

Probability

$ Loss

- **Potential considerations for Auto Liability**
  - Number and Type of Vehicles
  - Miles Driven
- **Potential considerations for Product Liability**
  - Products & Classes
  - Consumer Usage
  - Market Share & Revenue
  - Geographies
  - Damage / Liability assumptions

- **Potential considerations for Property**
  - Property Locations and TIVs
  - Content Valuations (e.g., boiler machinery and inventories)
  - COPE & Secondary Modifiers
  - Catastrophe Exposure
  - AOP Damage and Propensity Curves
  - Mitigation investments

Total vs. Economic Cost of Risk

3 › Is your insurance an efficient use of the company's capital?
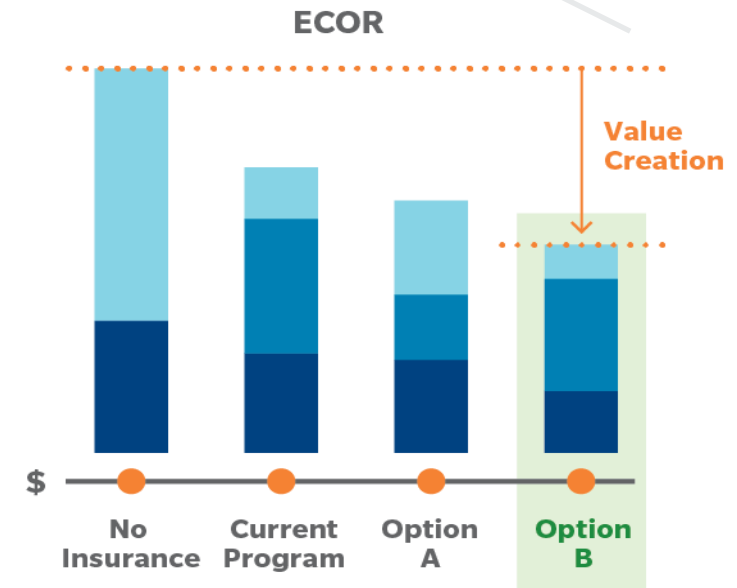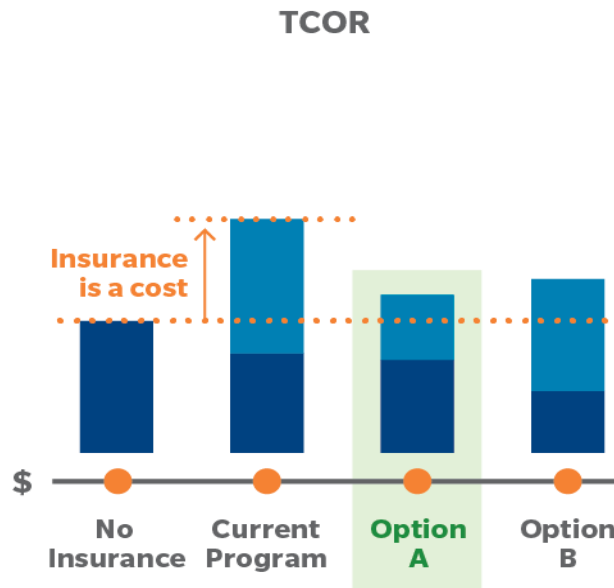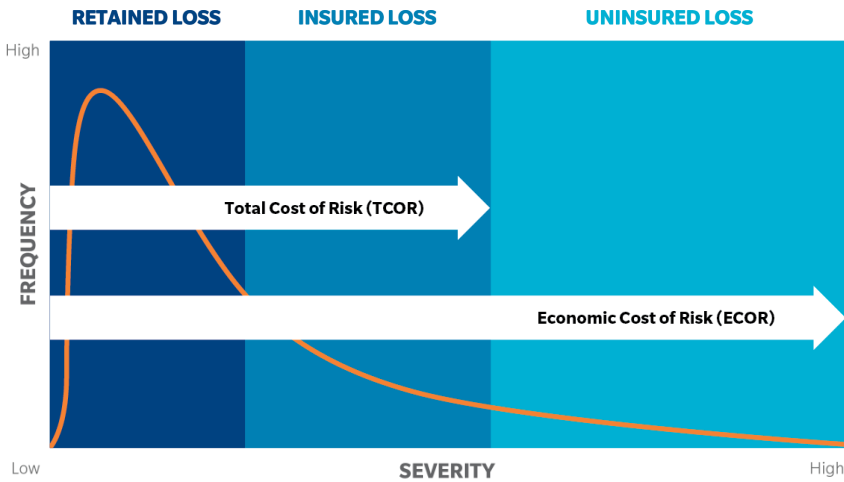
Assessing "Economic" Cost of Risk and Alternatives
Evaluating Efficiency of Your Insurance

Consider a Risk Financing Optimization as a trade-off analysis between retaining risk on your company's balance sheet as compared to paying to transfer the risk to the insurance carrier.

Key Statistics		Before Insurance	Retained After Insurance	(Cost) / Benefit
Average Annual Losses		4,506,858	3,780,731	726,127
Standard Deviation		23,875,866	13,111,817	
Coefficient of Variation		5.30	3.40	

1 in 1.33 Years	25% Perc	0	3,020,342	-3,020,342
1 in 2 Years	50% Perc	0	3,020,342	-3,020,342
1 in 4 Years	75% Perc	0	3,020,342	-3,020,342
1 in 10 Years	90% Perc	1,619,223	3,270,342	-1,651,119
1 in 100 Years	99% Perc	85,679,570	3,520,342	82,159,228
1 in 250 Years	99.6% Perc	151,915,728	34,936,070	116,979,658

Insurance looks like only a cost when you don't have losses

Insurance begins to pay off

Substantial benefit, multiples of premium paid

Economic Cost of Risk (ECOR)

Sign	Components	No Insurance	Current Program	Option 1	Option 2
+	Discounted Average Retained Losses	4,146,309	3,402,658	3,814,605	3,938,994
+	Premium	-	3,020,342	2,416,274	2,265,257
+	Implied Risk Charge	1,036,577	510,399	572,191	669,629
+	Collateral and Other Admin Costs	110,000	45,000	57,000	70,000
=	Economic Cost of Risk	5,292,887	6,978,399	6,860,069	6,943,879

Real-life Examples

US Foods - Chargeback System

- PIP (Premium Incentive Plan) is our chargeback system.
  - Lost-time work injuries.
  - Lost time days.
  - Vehicle accidents.
  - Lag reporting.

- Our actuaries have access to Enterprise.

- All claim data except for lost time days is pulled directly from Enterprise.

- The reports our actuaries create for the individual divisions use the claim data in Enterprise.

- Also use the claim data in Enterprise to calculate future PIP targets.

Real-life Examples

US Foods – Lowering Costs

- How did we know what to look for?

- Slicing and dicing the information.

- Claim costs going up.
  - How do you know why or where?
  - Specific division?
  - Regional?
  - Specific job/occupation?
  - Age group?
  - Injury type?
  - Body part?

- Take that data and use it to improve our numbers.

Real-life Examples

US Foods – Reaching Company Goals

- Implemented US Foods stretching program.
    - Soft tissue injuries.
        - Sprains and strains.
    - Implemented stretching program in divisions.
    - Monitored frequency of soft tissue claims.

- Results …
    - 10% reduction in sprain/strain claims.
    - $565,000 savings.

Real-life Examples

US Foods – State Your Case

• Average age of driver.

• Average age of picker.

• Average age of employee.

• How much are they lifting on a daily basis.

• What does that represent.

• Make an impact statement to your local management teams.

Real-life Examples

The Industrial Athlete - US Foods Associate

- The typical selector can lift upwards of 30,000 lbs per shift. That's the equivalent of lifting two killer whales every night.

- The typical selector lifts the equivalent of one Ford F150 truck every hour.

- On a single trip, the typical USF delivery driver will lift the equivalent of 16,000 lbs. That's the equivalent of a team of Budweiser Clydesdales.

Real-life Examples

US Foods – Workers Compensation Claims Make-up

- 60% of our drivers are over 40 years old.

- 21% of our drivers are over 50 years old.

- 36% of our warehouse workers are over 40 years old.

- 12% of our warehouse workers are over 50 years old.

- 58% of our hourly workforce is drivers, 42% non-drivers.

- 55% of our claims are drivers.

- 42% of our claim counts are sprain/strain accounting for 45% of the dollars.

- Pushing and pulling is the number one detail cause.

- Lifting is the number two detail cause.

- 19% of our claim counts are slip/fall accounting for 22% of the dollars.

- Slip & falls from the same level is the number one detail cause.

- Slip & falls from different level is the number two detail cause.

- 12 divisions account for 70% of the lost work days.

Questions

Thank you!

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