

How to Harness and Focus Informal and Formal Learning Data

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▪ Raytheon

- Over 90 years of innovation
- 61,000 employees worldwide
- Defense, Homeland Security, Aerospace

▪ Raytheon Professional Services (RPS)

- High consequence training expertise worldwide
- Trains more than 900,000 people a year
- 1,100 learning professionals
- 126 countries and 29 languages
- Learning solutions designed to solve critical business challenges



Topics

With many learning organizations facing the challenge of managing and optimizing an increasing amount of learning data, how do they harness, but not control, data related to the informal side of learning to drive learning effectiveness?

How do they optimize the value of formal learning data - the 10 in 70-20-10?

This webinar will address:

- signs and causes of the deluge of learning data
- 4 steps to make informal learning visible and insightful.
- 4 steps to identify, clean, and harness data for formal learning



Today the **Internet is a network of information**

Contains **60 trillion web pages**

Remembers **4 zettabytes of data**

Transmits **millions of emails per second**

Interconnected by sextillions of transistors

If **1 gigabyte = 11oz cup of coffee**

1 zettabyte = volume of the Great Wall of China

1 zettabyte =
1,000 exabytes

1 exabyte =
1,000 petabytes

1 petabyte =
1,000 terabytes

1 terabyte =
1,000 gigabytes

1 gigabyte =
1,000 megabytes

It would take **5 years** to watch the amount of **video that crosses the internet every second**

In **2011**, the amount of **data** on the internet was almost **equally split** between **file sharing, video and email**

By the end of **2015**, **video data was double** that of file sharing & email combined!

Why does this matter to L&D?

Access to data provides just-in-time learning and in “bite size chunks”

How do we **create additional value for the enterprise** given this scenario?

Informal

Formal

Optimize the formal and harness the power of the informal!

Harness the power of the informal



Informal

Formal

Make 70/20 data visible and insightful

1

Need a bigger ship?

2

Avoid boiling the ocean

3

Try something new

4

Have a recipe

Make 70/20 data visible and insightful

- Need a bigger ship or a better fleet?
- Technology disruptions
 - Internet of Things
 - Cloud Computing advances
 - Bandwidth increases
 - Processor power, storage capacity
 - Mobile computing
 - VR, AR, HTML5
- New learning infrastructure implementation time
- Quick wins and momentum for change
- Invest in base learning infrastructure

1

Need a bigger ship?

Avoid boiling the ocean

Try something new

Have a recipe

Make 70/20 data visible and insightful

- Apply the **Pareto principle**
- Focus on the **top issues**
- Work **project tasks in days**, not months
- **Small quick wins** will pave the way

Need a bigger ship?

2

Avoid boiling the ocean

Try something new

Have a recipe

Make 70/20 data visible and insightful

- Learning standards
- Key Performance Indicators (KPI's) in place
- xAPI learning standard tracks formal and informal learning activities
- Learning Record Store
 - “Learning Data Warehouse”

Need a bigger ship?

Avoid boiling the ocean

3

Try something new

Have a recipe

LMS

C1	C2	C3	C4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Relational data model

Highly-structured table organization with rigidly-defined data formats and record structure.

LRS



Document data model

Collection of complex documents with arbitrary, nested data formats and varying “record” format.

Make 70/20 data visible and insightful

- Good news – xAPI is very flexible
- Bad news – xAPI is very flexible
- Define your vocabulary
 - Bob “passed” Ladder Safety
 - Bob “passed” the car safely
 - Bob “passed” the kidney stone
- Vocabulary = recipe
 - One verb = one meaning
 - Standard recipes will get you 80% there
- Pioneering xAPI companies have done the heavy lifting

Need a bigger ship?

Avoid boiling the ocean

Try something new

4

Have a recipe

Optimize the formal: Processes and Data



Informal

Formal

Clean and harness the formal learning

1

Process
improvement

2

Functionality
improvement

3

Data clean
up

4

Integration
improvement

Clean and harness the formal learning

1

Process
improvement

Functionality
improvement

Data clean
up

Integration
improvement

- Start with the end goal in mind
- What is the burning platform or the pain point that you face?
 - Is it quicker speed to competency?
 - Is it less errors or better quality?
 - Is it to do more with less?
 - Is it to provide one message with one focus?
- Document current state and end state

Clean and harness the formal learning

Process
improvement

2

Functionality
improvement

Data clean
up

Integration
improvement

- Better governance
- More efficient use of learning resources
- Better, fewer authoring tools, for quicker results and long term efficiency
- Easier reporting
- Key Performance Indicators

Clean and harness the formal learning

Process
improvement

Functionality
improvement

3

Data clean
up

Integration
improvement

- Cleaning up in advance of a migration is 10x easier than after go live
- Identify "system of record"
- Eliminate duplicate learning courses
- Automate all interfaces... no exceptions if possible

Clean and harness the formal learning

Process
improvement

Functionality
improvement

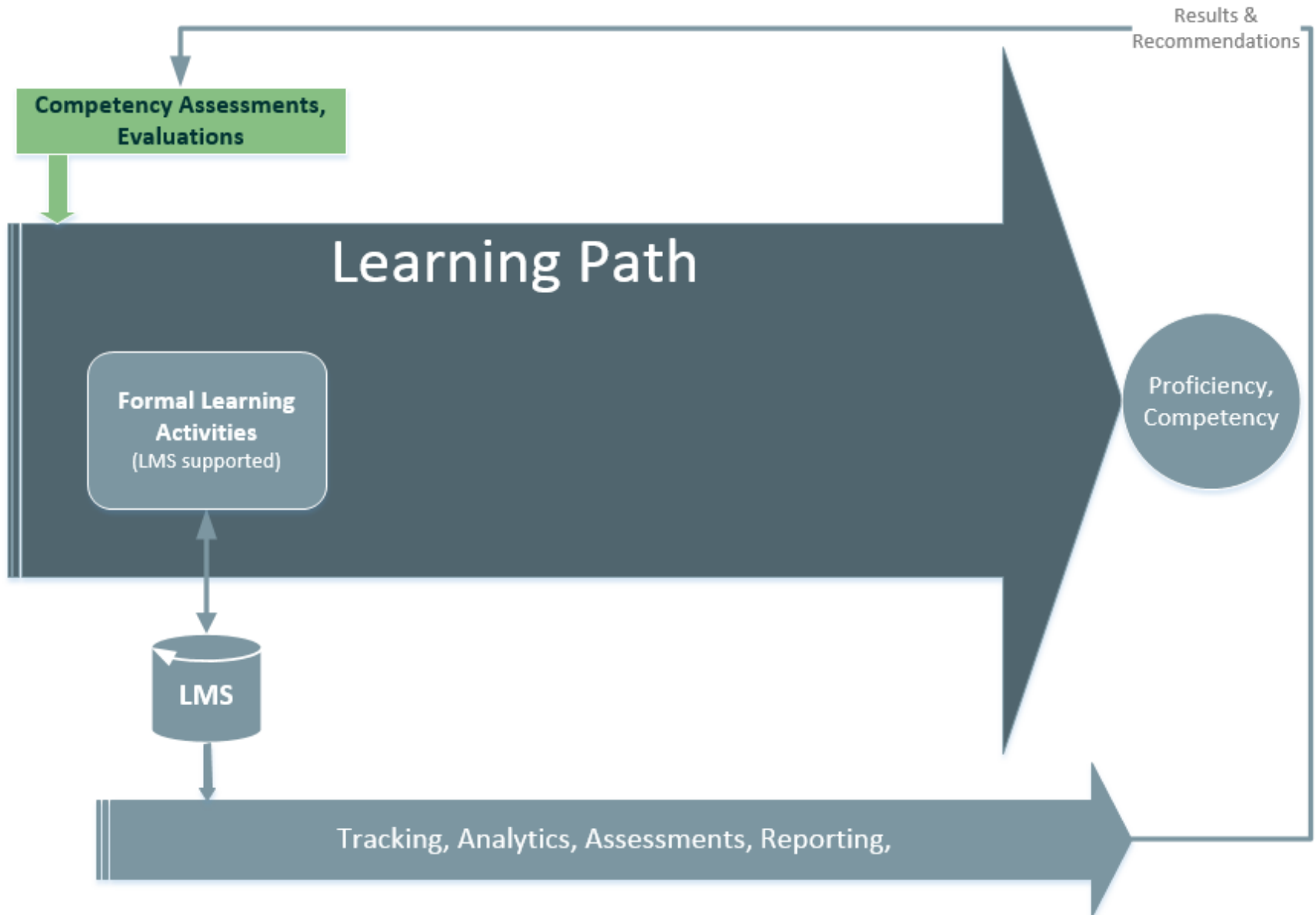
Data clean
up

4

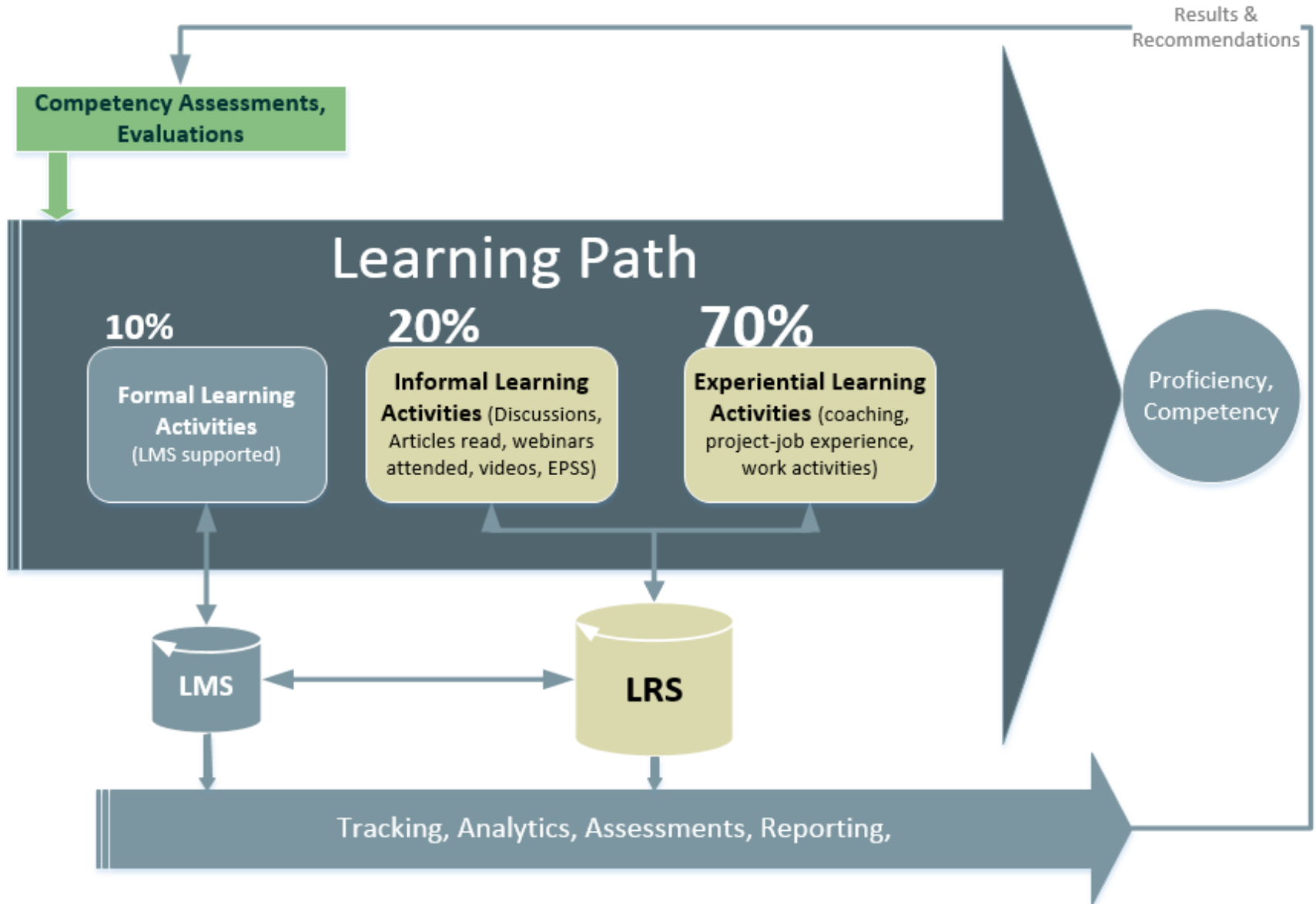
Integration
improvement

- ERP system connections: PeopleSoft, SAP, SalesForce
- Directory Service type personnel data feeds
- 3rd party learning vendor interface feeds
- Data warehouse connections
- Content servers
- Architecture picture = Gold!!

Managing formal learning



Managing formal & informal learning



Initial Steps

- **Focus** on the biggest opportunities/pain points
- **Tackle** one or two key areas to analyze and improve
- **Consult** an experienced data analyst or scientist
- **Learn, optimize** and repeat

Make your data harnessed, visible and insightful



QUESTIONS?

Turn the deluge into directed energy!

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