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The Tin Can eXperience

A hyperScience whitepaper – making the complex understandable

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ABOUT THE AUTHOR

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When Alex is not working, you will find him snowboarding, walking his dog, or flying model airplanes.

INTRODUCTION

Tin Can has become a recent buzzword in the world of learning and for good reason; it is being dubbed as “the next generation of SCORM.” The Sharable Content Object Reference Model (SCORM) has been the prevalent standard of e-Learning for over a decade but has seen few improvements since 2004. SCORM emerged when laptops just started gaining a foothold in the enterprise and the first iPhone was still seven years away.

In 2010 the agency responsible for SCORM, Advanced Distributed Learning (ADL), partnered with Rustici Software to engage the learning community and initiate research into developing a new standard to take SCORM's place. This project was named Tin Can.

“Tin Can API” has been officially renamed “eXperience API”, or “zappy” for “xAPI”. All naming aside, version 1.0 is here, and the industry is pulsating with excitement to see what early adopters are going to come up with to take advantage of the new technology.

The beauty of Tin Can or xAPI is its flexibility and its simplicity. The idea behind this technology is to transcend the Learning Management System (LMS) and open up the learning experience to the world around us. The restrictions for communicating across domains have been eliminated, allowing xAPI to be used across multiple locations, devices, and 3rd party vendors.

Technology is all around us. Many people regularly carry around a mini-computer disguised as a phone in their purse or pocket and interact with a laptop or a piece of machinery the majority of the day. Humans learn through interactions such as on-the-job-training for operating a forklift, interacting with a flight simulator, or perhaps a more academic experience such as learning a mathematical formula from an e-learning course. xAPI provides a standard for describing these experiences and storing them for analysis.

TERMINOLOGY

TIN-CAN API = eXperience API = xAPI

"The xAPI is a specification that describes an interface and the storage / retrieval rules that developers can implement to create a learning experience tracking service." - ADL

Learning Record Store = LRS

"A Learning Record Store (LRS) is a system that stores the tracking statements communicated through the Experience API (xAPI). The LRS works with the xAPI to collect and return statements. It can be integrated into a larger system like an LMS, or it can stand alone as a separate system and use the xAPI to allow other systems to add and retrieve statements." - ADL

xAPI Statement

"The format of these statements is based on Activity Streams (< Actor, Verb, Object > or 'I did this:')." - ADL

The xAPI statements are framed after the Activity Streams specification, an open source project for defining statements in social networks. Ex: "User X completed Chapter 5"

HISTORY

The eXperience API is owned by Advanced Distributed Learning group. It is a U.S. government-funded agency focused on learning, working in cooperation with Department of Defense and various partnership laboratories across the United States and the globe.

The current e-learning standard, SCORM, is starting to show its age. It has left a lot of people underwhelmed in both its complexity and the lack of tools able to take advantage of its advanced features. These standards are not capable of providing a one-stop solution for tracking education, career development, and self-improvement across devices and networks. The education industry has been ready for a new standard to come and sweep it off its feet. Enter eXperience API, code name: **Tin Can.**

Rustici Software was heavily involved in developing this project. They were selected by ADL to assist in drafting the standard and developing a proof of concept. The project was named "Tin Can". As other organizations got involved with the project, the momentum grew and the fruit of their labor is **xAPI Specification 1.0** which was announced on April 29, 2013.

“The xAPI is an ongoing community-driven specification with contributors participating from around the world.”

* ADL

"Tin Can" is catchy and memorable and, courtesy of Rustici Software, has a URL and a logo. "xAPI" looks like another XML derived acronym, but it is the official name behind the standard. Which name will win in the end remains to be seen, but for the time being we'll be using these terms interchangeably.

CONCEPT

The idea behind xAPI is to offer maximum flexibility with minimum complexity. This standard allows the content creator to set up triggers in any software or any device to send a message to the LRS. This could be a literal interaction such as: "User X Pressed #3" or a perceived interaction such as: "User X Completed Chapter 5".

EXAMPLE:

Imagine an app on a mobile phone that lists a set of tasks for operating a construction crane. As each task is completed, the operator crosses off each item. (In a more complex scenario, the crane can communicate with the app or the LRS directly to check off task items automatically.) For each item the operator checks off his/her list, a record is stored in the xAPI record store (LRS).

The information gathered from this fictional app can be used for training a new operator or minimizing liability. The records from the LRS can be used to show the operator's satisfactory learning requirements or to help identify a cause of an incident.



It is up to the software of a device to record experiences and synchronize them with the LRS. These experiences are recorded as xAPI statements:

xAPI Statement = Noun + Verb + Object

Employee X

checked

the breaks

ANALYTICS VS PERFORMANCE METRICS

*“**Analytics:** is the discovery & communication of meaningful patterns in data”*

*“**Performance Metric:** is a measure of an organization’s activities and performance”*

Organizations have been able to record performance metrics with the help of SCORM and an LMS for years. They have been able to report on the fact that all of the appropriate personnel have completed required training and perhaps what scores were achieved for the final exam. The piece that has always been missing is the ability to go beyond compliance reporting and get to the core of learning: experiences. xAPI's ability to record multiple interactions across devices offers an unprecedented opportunity to collect valuable data for analysis.

With the help of xAPI, an organization can analyze user behavior to improve efficiency, safety and compliance. They can better track comprehension and behavior to identify peak performers and help others to reach their maximum potential.



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