TOTVS – TQTVD Ginga

David Britto, January 2016

TOTVS

In this presentation

TOTVS & TQTVD

TOTVS

Who are we?

We are a **business solution** company, funded and based in Brazil, with **costumers in 39 countries** and **11 Development Centers** in Brazil, Mexico and United States.

We are one of the largest ERP Suite providers in the world and the largest in Brazil with **over 50% of market share**.

22º most valuable brand in Brazil and the **1º B2B**.

First tech company in Latin America to IPO.

+R$ 1.000M invested in R&D in the last 5 years.

TQTVD

TQTVD is a software company, focused in providing **solutions for Digital TV**.

It is owned by TOTVS.

We provide full interactive TV middleware compliant to the Ginga spec.

Full ISDB-T software stack for set-top-boxes and TV sets.

Our solutions are embedded in over 5M TV receivers, along Brazil and other LatAm countries.

DTV in Brazil

TOTVS

About the SBTVD Forum

It is a non-profit entity, responsible for the development, deployment and promotion of the DTV in Brazil. It has been founded in 2007 and its members belong to:

- Broadcasting industry;
- Transmitters manufacturers;
- TV receivers manufacturers;
- Software companies and
- Universities.

Also, Federal Government representatives participate as well.

The SBTVD Forum has developed the DTV technical specification used for the Brazilian DTV System and published as ABNT standards, along with many other support assets such as operational guidelines, test suites and technical reports.

The Ginga Middleware Specification
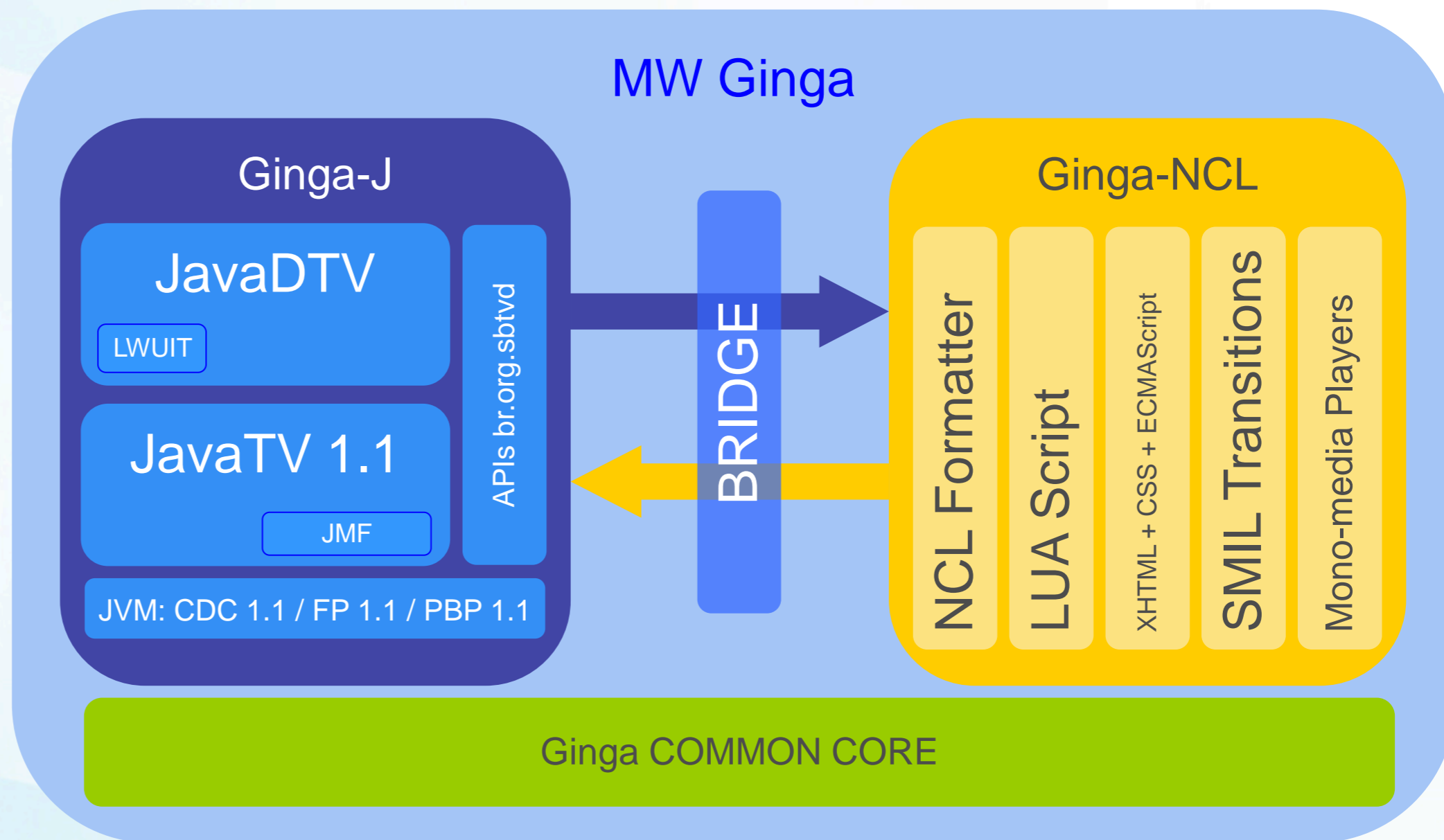
What is Ginga?

Ginga is the specification of the middleware for DTV Interactivity developed in Brazil.

It is specified in the Brazilian standards ABNT NBR 15606 (volumes 1 to 9).

The spec. provides two environments for executing applications:
• Ginga-J: based on Java and JavaTV
• Ginga-NCL: based on the NCL and Lua scripting language.

The Ginga spec. is constantly evolving. The latest major update was the inclusion of Profile C. It allows delivering up to 2GB applications within the Broadcast signal. This enables the development of richer multimedia oriented applications.

MW Ginga

Ginga-J

JavaDTV

LWUIT

JavaTV 1.1

JMF

APIs br.org.sbtvd

JVM: CDC 1.1 / FP 1.1 / PBP 1.1

BRIDGE

Ginga-NCL

NCL Formatter

LUA Script

XHTML + CSS + ECMAScript

SMIL Transitions

Mono-media Players

Ginga COMMON CORE

Since 2010, over 30M Ginga enabled TV sets units sold in Brazil. This number grows roughly 12M~14M per year.

About the Analog Switch-off

The process of switching off the Analog TV switch-off has already been started. The schedule is to be completed by the end of 2018.

The process is being partially funded by the incomes from the 700MHz band licensing for LTE services. One of the analog TV switch-off process is to remove TV channels currently using this part of the spectrum.

14M set-top-boxes (with Ginga Profile C) are to be ordered by the Government, until 2018. These are to be distributed among the households that receive aid from the Government Social plans.

The same number of set-top-boxes units is expected to be sold in the retail market in the next 3 years.

Ano de desligamento
- 2015
- 2016
- 2017
- 2018

ISDB-T International

![TOTVS]

ISDB-T International

Adoption of ISDB-T systems

ISDB-T International Forum reunites all the
countries that have already chosen for
ISDB-T as the system for Digital TV.

Current members are:
Latin America: ARGENTINA, BOLIVIA,
BRAZIL, COSTA RICA, CHILE,
ECUADOR, GUATEMALA, HONDURAS,
NICARAGUA, PARAGUAY, PERU,
URUGUAY, VENEZUELA

Africa: BOTSWANA

Asia: JAPAN, MALDIVES, PHILIPPINES,
SRI LANKA

ISDB-T International Forum's plenary
meetings occurs once a year. Last one,
happened on November/2015 in Brasilia.

☐ DVB/T
☐ ATSC
☐ ISDB-TB

Adoption of Interactive Middleware

Asian countries are adopting BML (HTML based, originally developed by Japan)

Most Latin America countries are in the processes of adopting Ginga.

Argentina has opted in for Ginga in 2010 but it has chosen NOT to include Java, just Ginga-NCL! Venezuela, followed the same path short little after.
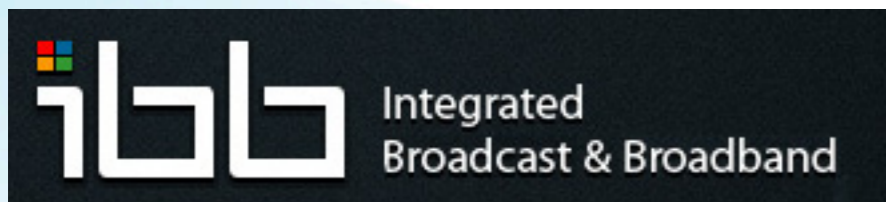
Drawbacks from this decision:
- Fragmented market
- May influence other countries to make the same decision
- The Java ecosystem missed an opportunity for growing

DVB/T
ATSC
ISDB-TB

Ginga in ITU & IBB Systems

Ginga & International Telecomunication Union (ITU)

Ginga is a recognized standard by the ITU

- As standards for open TV Middleware, Ginga-NCL, Ginga-J were approved within the SG9 of ITU-T and WP6 of ITU-R, respectively in Recommendations J.201, J.202, BT. 1699 and BT.1722.

- Ginga-NCL has passed the full approval process within the ITU SG16 and was endorsed as a standard (ITU H.761) for IPTV.

- Currently, Brazil is proposing Ginga to be considered by ITU as full-fledged Integrated Broadcast & Broadband (IBB) middleware, providing same kind of functionality as the new families of hybrid middlewares such as HybridCast and HbbTV.

About IBB Systems

IBB Systems is a framework that support the combination of multiple scenarios and use cases such as:

- Traditional TV Interactivity
- Hybrid TV Interactivity
- OTT and VOD systems
- OTT TV Channels
- Content updating through broadcast and/or broadband
- Second Screen devices integration
- App Stores

David Britto
CTO TQTVD

david.britto@totvs.com.br

Obrigado ;)

TOTVS