

# Java TV

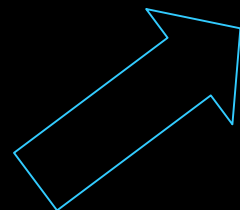
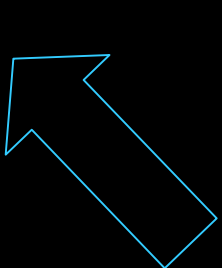
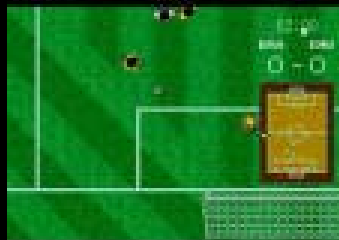


**Como seria a sua vida,  
se não houvesse a Televisão ?**





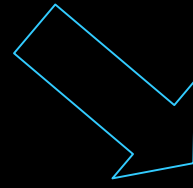
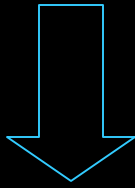
# Jogo de Futebol (Hoje)

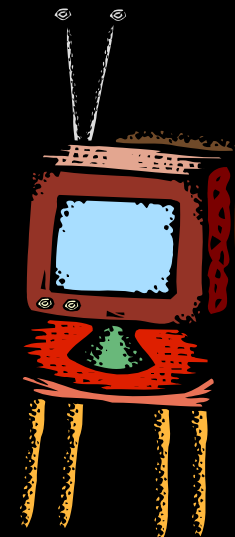
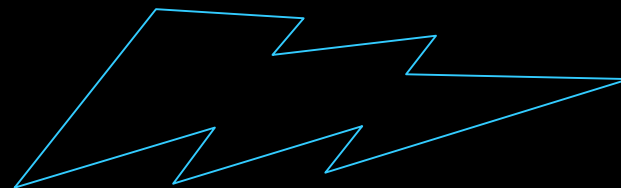
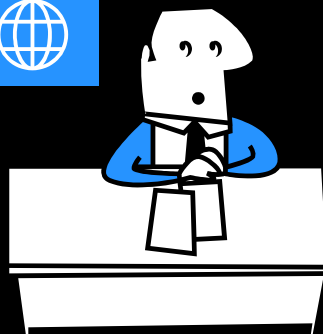


**De um simples  
Jogo...**



**...mais  
informações**



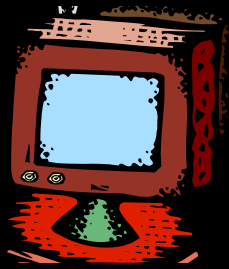


**Infra-estrutura**

**Televisor**

**LIMITAÇÕES TECNOLÓGICAS**





## TV Digital

**Eliminação de Chuviscos e Sombras**

**Maior Definição**

**Widescreen & Progressive Scan**

**Recursos Interativos**

**Canais Separados para Som**

**Possibilidades de Imagens de Alta Definição (HDTV)**



## TV Digital

TV guide | 10:45 | **Teletext**

# TVplus

- 1 **Young at Heart**  
Kirsty to join Trevor in dream team
- 2 Girl band in sexy drama!
- 3 EastEnder Robbie gets back at Barry
- 4 London's Burning: New look; New cast
- 5 Friend's star gets a new haircut
- 6 X-files pets are stranger than fiction

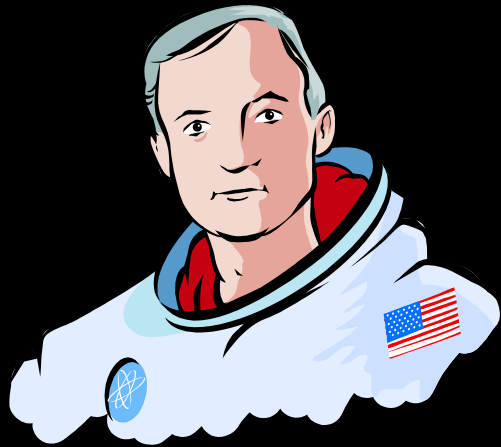
**BLOCKBUSTER VIDEO**  

Tonight's TV    Films on TV    Sport    News

9

**Image e Som  
Convencionais**

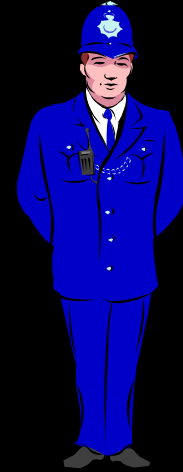
**Interatividade**



**Americana  
(ATSC)**



**Japonesa  
(ISDB)**



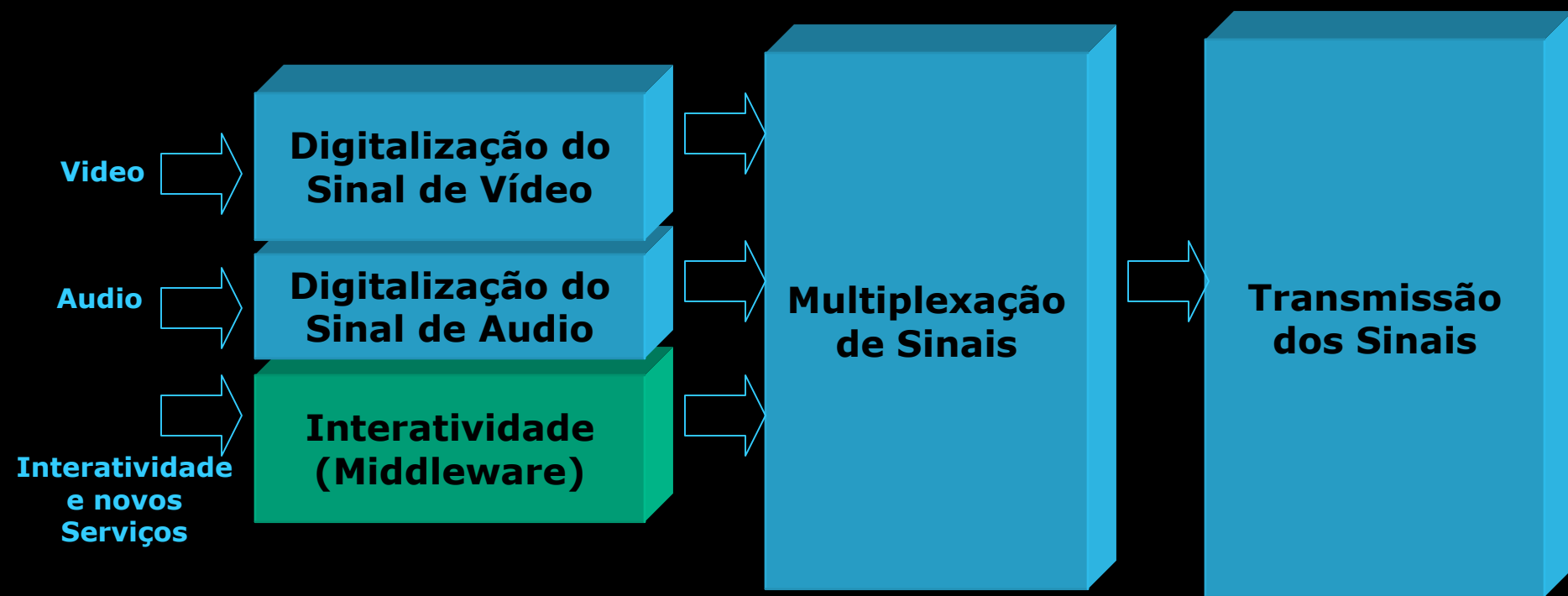
**Européia  
(DVB)**

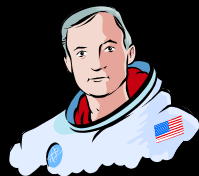
Na adoção de qualquer uma delas....

**Direitos Autorais e Royalties**

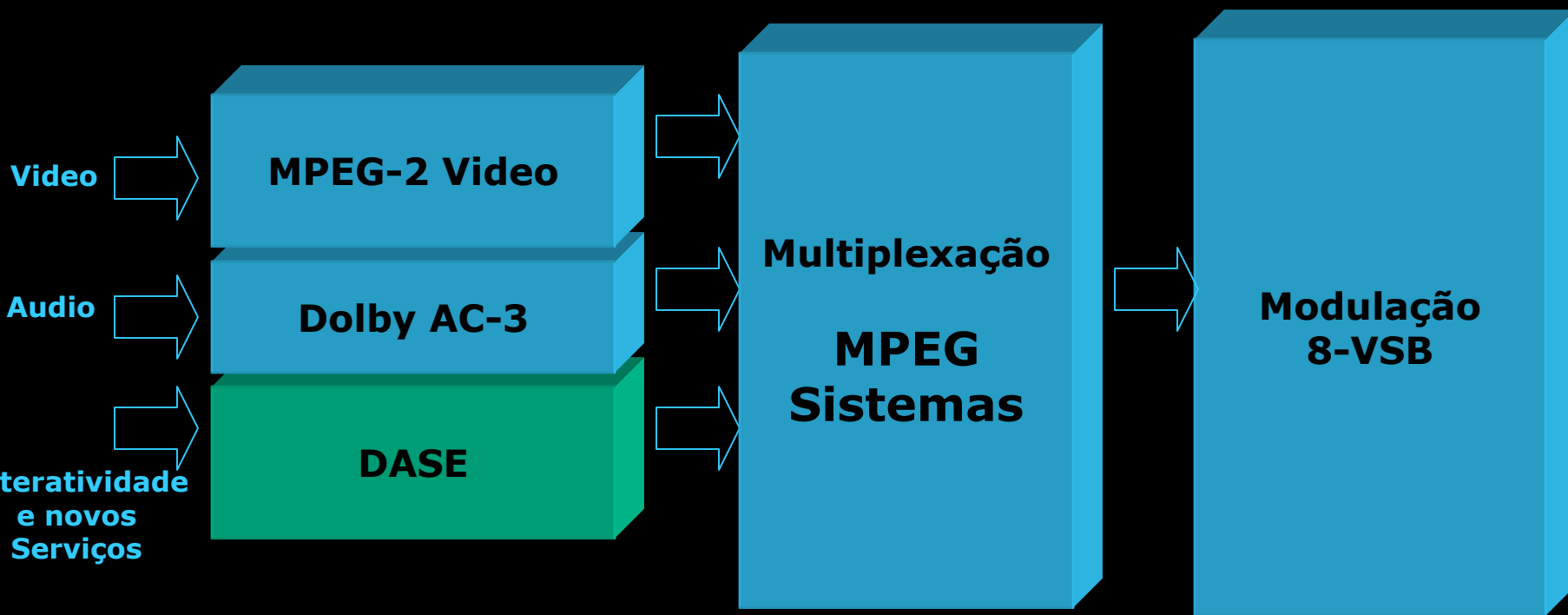


# Transmissão (Genérica)





# ATSC



**Privilegia: TV de Alta Definição (HDTV)**



## ISDB

Video

MPEG-2 Video

Audio

MPEG-2 AAC

Interatividade  
e novos  
Serviços

ARIB

Multiplexação

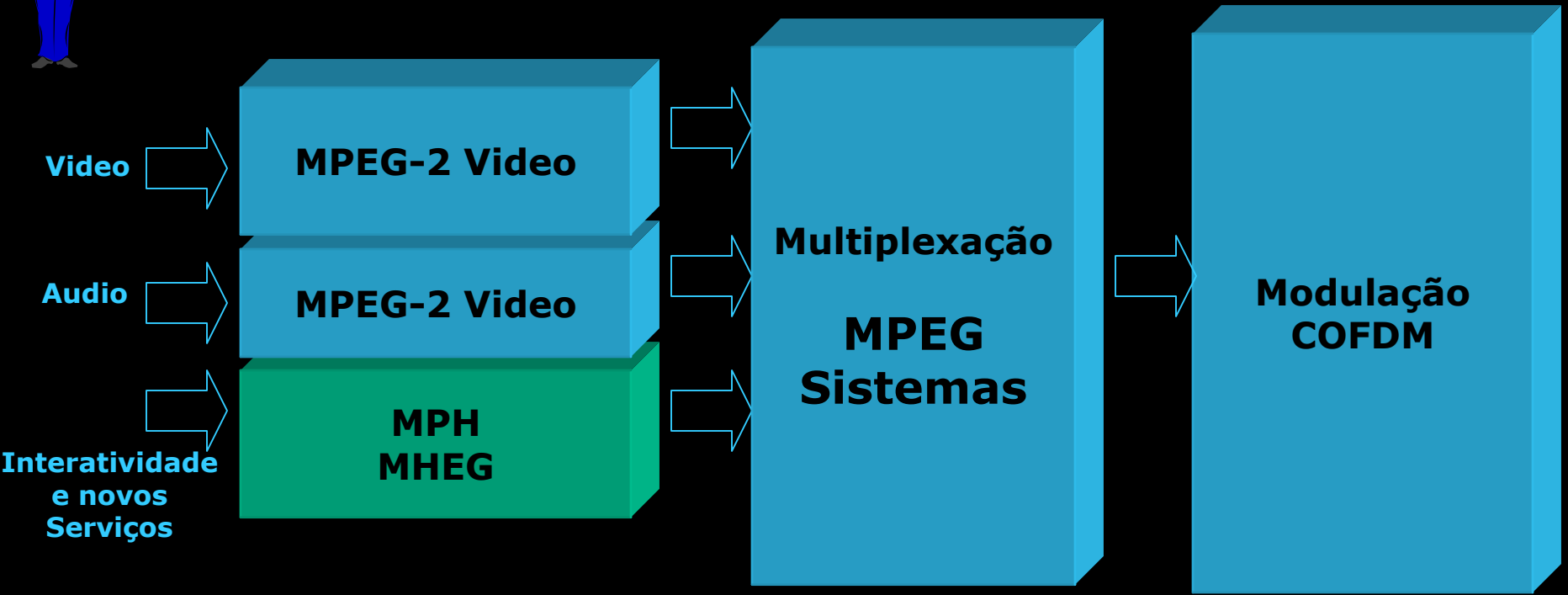
MPEG  
Sistemas

Modulação  
COFDM

**Privilegia: TV de Alta Definição (HDTV)  
Recepção Móvel e Portátil**



# DVB



**Privilegia: Multiprogramação**

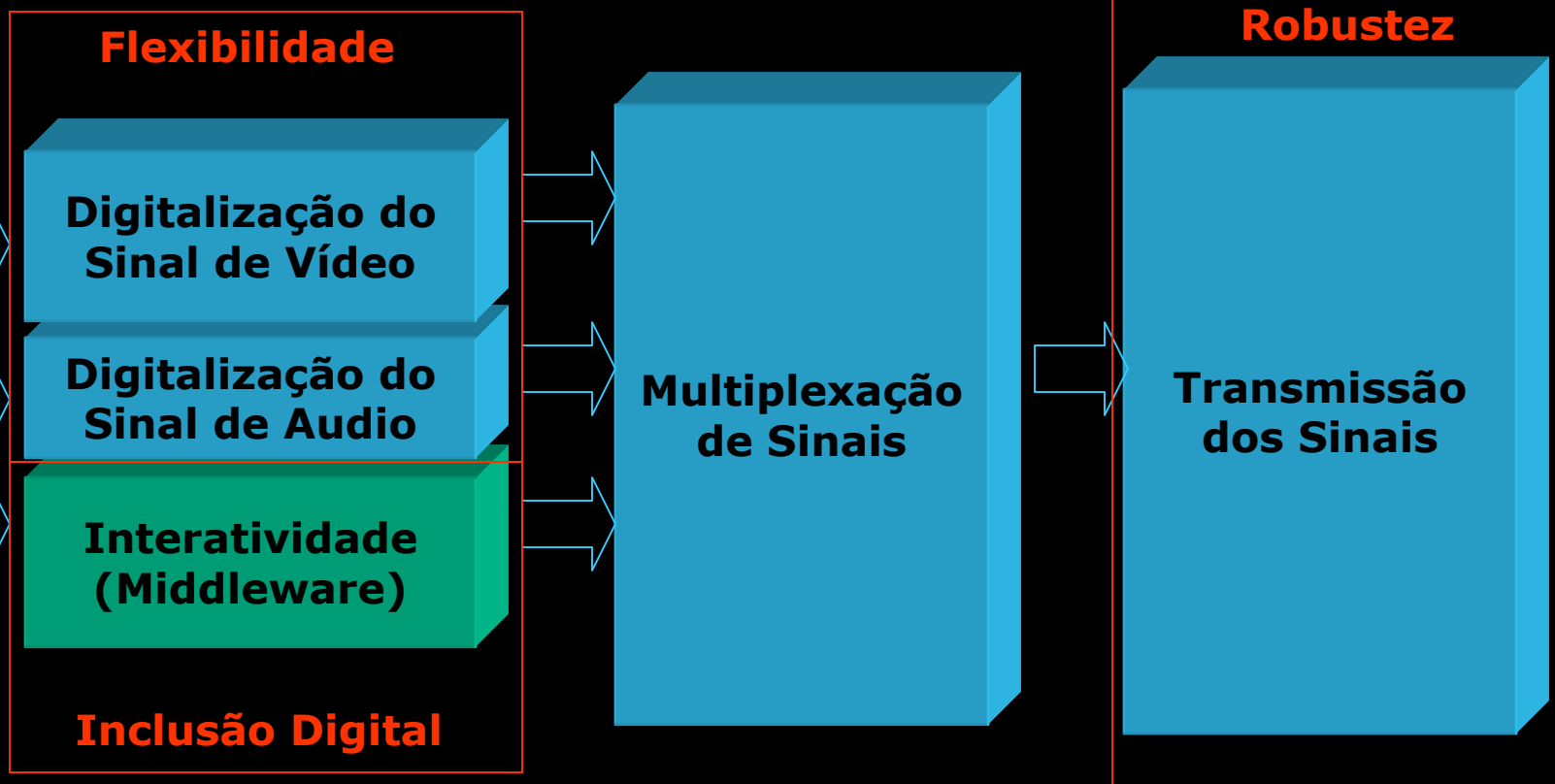
**Interatividade e Novos Serviços**



## Brasil decidiu criar seu próprio sistema

# SBTVD

*(Sistema Brasileiro de TV Digital)*





## SBTVD

**Reduz o pagamento de Royalties**

**Torna mais acessível o preço do set top box para as classes C, D e E**

**Aproveita o parque instalado**

**Flexível para as condições sócio-econômicas brasileiras**

**Implantação gradual**

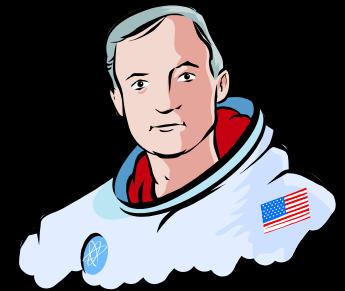
**Passível de Aplicação em outros Países**



# Diversidade de Padrões



**SBTVD**



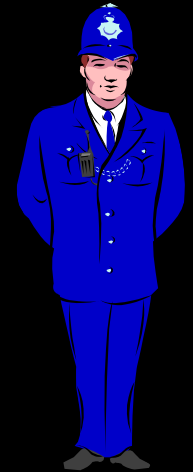
**ATSC**



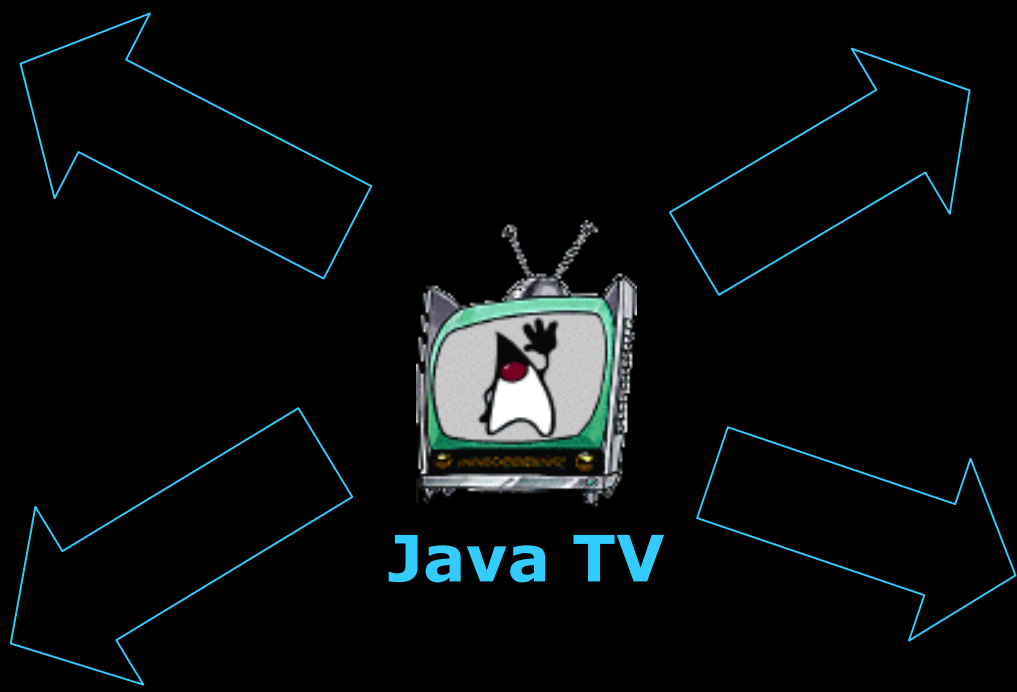
**Java TV**



**ISDB**



**DVB**





## Java TV

### MATSUSHITA ELECTRIC INDUSTRIAL CO.

"We believe that Java is one of the key software technologies for digital TV. The Java TV API will be an important addition to the technology portfolio that will be available for future Matsushita products. We support Java TV API along with other proposed TV-related industrial standards", said Yoshiaki Kushiki, Director, Multimedia Development Center of Matsushita Electric Industrial Co., Ltd.

### PHILIPS CONSUMER ELECTRONICS

"Java technology provides a natural de-coupling layer that allows the content industry to create compelling applications in a stable and rich environment, while enabling suppliers like Philips to independently evolve the underlying product architectures, providing continuous improvement in functionality, performance and product integration. Therefore, Philips is pushing forward in this direction in a direct dialog with Java TV API, as well as by contributing in various established standardization bodies," said Roel Kramer, chief technology officer, Philips Consumer Electronics.

### SONY ELECTRONICS

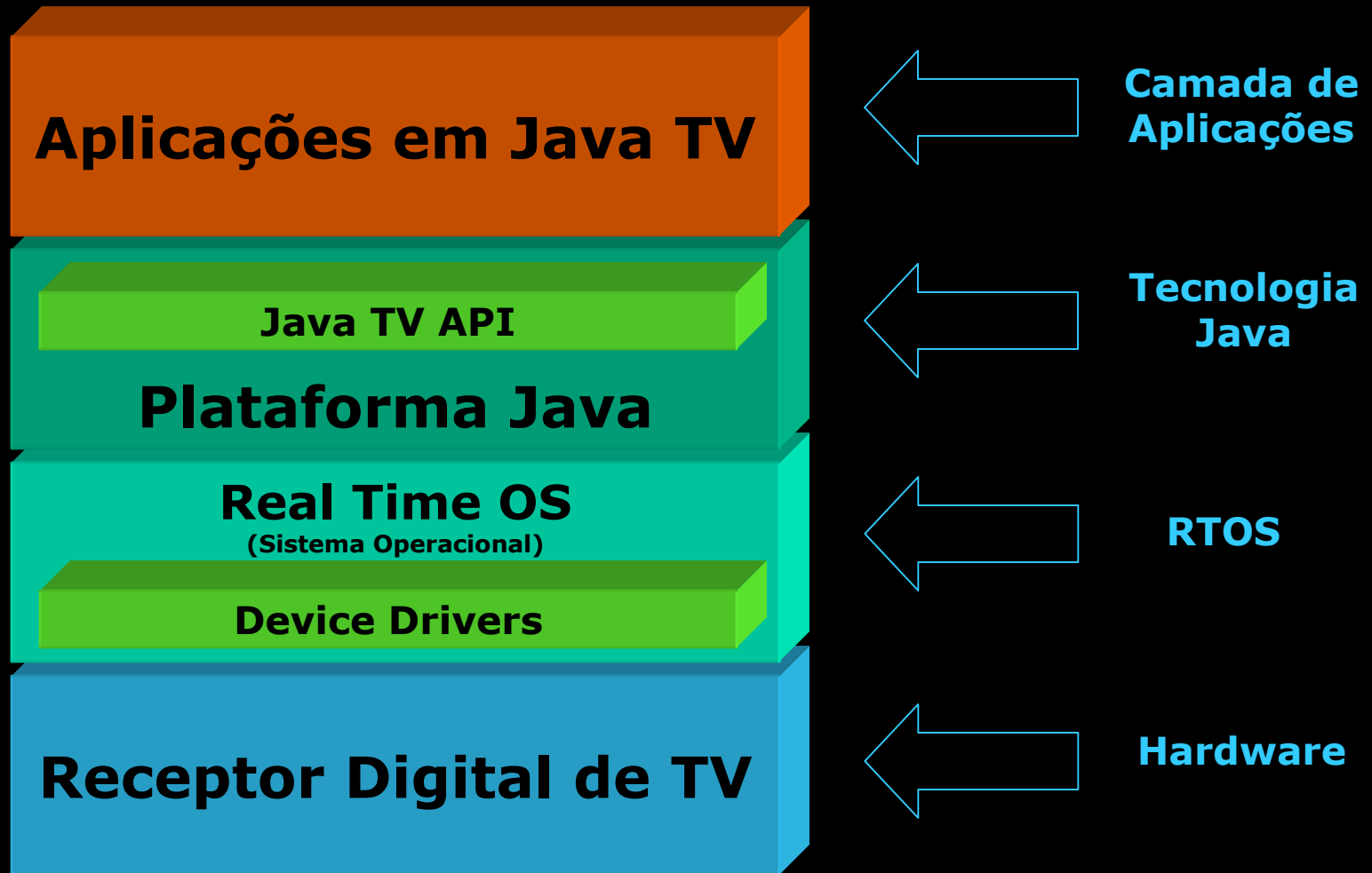
"Sony will play an active role in the development of Java TV API and hopes to contribute to the activities of open standards bodies such as Digital Video Broadcasting. We bring a unique combination of electronics products and technologies, pictures, TV programming and music content. Our strengths in these areas, along with our experience in establishing open worldwide standards, will enable implementations of the Java TV API to offer innovative content to consumers in the U.S. digital television market," said Gary Myer, president of Digital Network Solutions Company of America, a division of Sony Electronics.

### TOSHIBA

"Through its marketing efforts of digital set top boxes, Toshiba comes to believe in the necessity for a standard Java API to control digital media streams. Toshiba welcomes standardization of broadly supported APIs such as the Java TV API, which will help to accelerate the launch of the new market," said Naotake Kurotsu, general manager, Computer & Network Products Division, Toshiba Corporation

### LG ELECTRONICS

"LG Electronics is excited about the opportunity to work with Sun Microsystems to create an API specifically for the digital television market. We believe Java technology will help accelerate time to market and enhance innovation in the marketplace," said Woo Hyun Paik, chief technology officer of LG Electronics. "Sun's intention to create an API for digital television by working with standards bodies, will bring Java technologies' 'Write Once, Run Anywhere' benefits to the digital television market."





## Java TV

The screenshot shows a Java TV application interface. At the top, a blue bar contains the text "TV guide" on the left, a vertical bar with "10:45" in the center, and "Teletext" on the right. Below this, the "TVplus" logo is displayed in large red and yellow letters. A central image shows a smiling woman with short blonde hair. To the right of the image is a numbered list of six items:

- 1 Young at Heart  
Kirsty to join Trevor in dream team
- 2 Girl band in sexy drama!
- 3 EastEnder Robbie gets back at Barry
- 4 London's Burning: New look; New cast
- 5 Friend's star gets a new haircut
- 6 X-files pets are stranger than fiction

Below the list is a blue bar with the text "BLOCKBUSTER VIDEO" in yellow. To the right of this bar are two small images of VHS tapes. At the bottom, a dark bar contains four navigation options: "Tonight's TV" (red text), "Films on TV" (green text), "Sport" (yellow text), and "News" (cyan text). A small number "9" is visible in the bottom right corner of the screenshot.

## Electronic Program Guides

*Guia de Programação e Conteúdo das Emissoras,  
possivelmente com atualização on-line, inclusive mudando  
de canal após uma escolha*



**Java TV**

**TV SPORTS ACTION CARD**

	Team: San Jose Speed
	Position: Guard
	Jersey Number: 23
	Height: 6' 6"
	Birth Date: February 17, 1963
	Birthplace: Brooklyn, NY
	NBA Experience: 14th Season
	Championships: 6

**Bobby Dunkwell**

Total Games:	82	<b>23</b>
Total Minutes:	3,181	
Points per Game:	28.7	

## Aplicação Específica

*Programas que seguem junto ao programa assistido, como um jogo vindo proveniente de programa de Quiz*



**Java TV**



MY STOCKS	CL	CSCO	DIS	FNM	INTC	JNJ	KO	SUN
	80.25	111.50	33.00	72.75	140.75	85.00	65.25	111.
NASDAQ	rySPhm	BeAero	AztecTC	BeaSys	BISYS	BMCSft	E	
	5.69	12.13	15.38	52.88	46.06	6.00		

## Aplicação Standalone

*Aplicação independente de qualquer tipo programas televisionados, como uma pequena faixa com as cotações do dólar, euro, etc...*



**Java TV**

**INTERNATIONAL MOTOR COMPANY**

Visit your local dealer at:  
2222 Grand Blvd. East, South Dockport

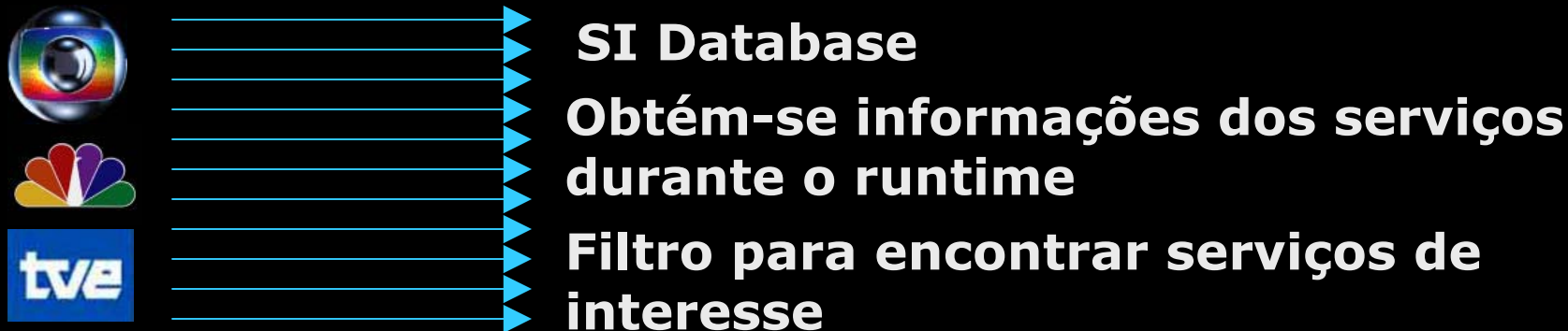
[Send Me Info](#) [Print Coupon](#)

## **Propagandas**

*Aplicações interativas vindas juntas as propragandas e comerciais entre diferentes shows*



## Acesso a Serviços e Informações destes Serviços



## Controle do Conteúdo Recebido (Broadcast Pipeline)

Acesso e Controle ao Conteúdo recebido pela emissora utilizando-se JMF (Java Media Framework)

## Controle dos Dados Recebidos (Broadcast Data)

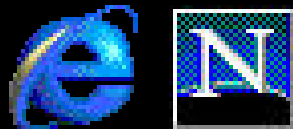
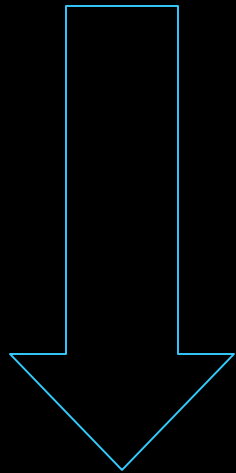
Obtém-se informações diretos do multiplexador do aparelhos, das informações provenientes da emissora

## Gerenciamento do Tempo de Vida da Aplicação

Controle da Seqüência no qual a aplicação é criada, inicializada e destruída

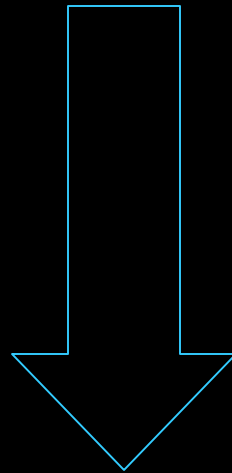


## Applet



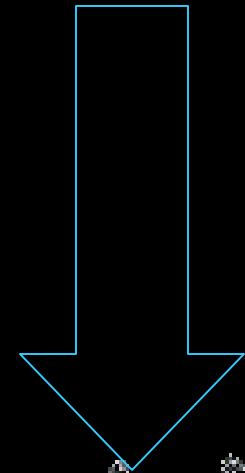
**Navegador**

## MIDlet



**Celular**

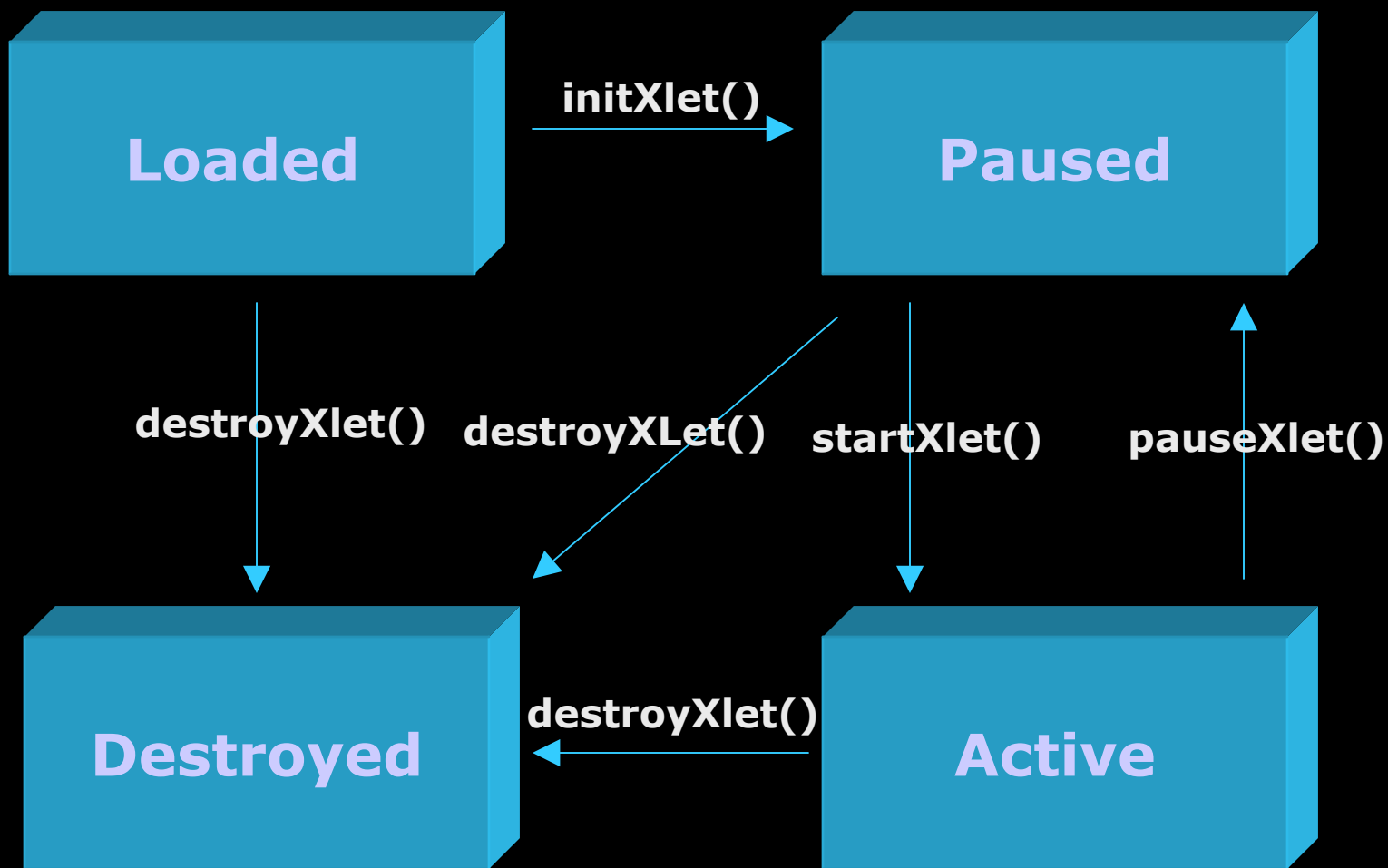
## Xlet



**Televisão**



# Ciclo de Vida do XLET





```
import javax.tv.xlet.*;
import javax.tv.graphics.*;
import javax.tv.service.*;
import javax.tv.service.guide.*;
import javax.tv.service.navigation.*;
import java.awt.*;
import java.awt.event.*;
import java.util.Date;
import java.text.DateFormat;

public class SvcDispXlet implements Xlet, ActionListener {
    . . . . .
}
```

## **1** Criar uma classe e implementar a interface Xlet



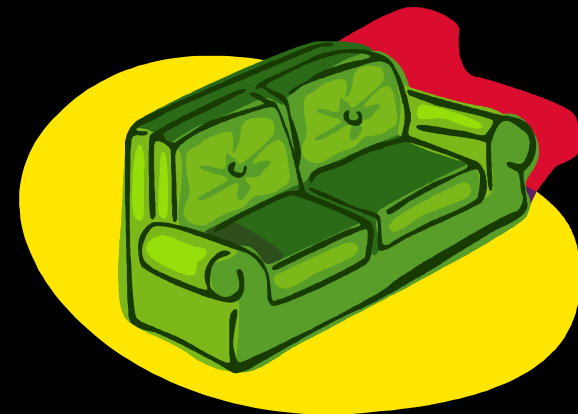
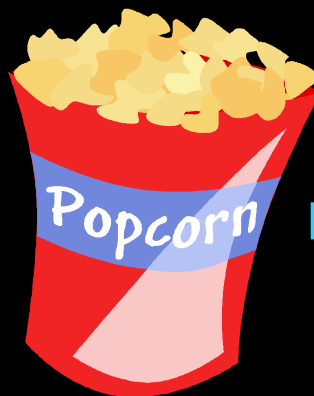
```
...  
public void initXlet(XletContext ctx) {  
    ...  
}  
  
public void startXlet() {  
    ...  
}  
  
public void pauseXlet() {  
    ...  
}  
  
public void destroyXlet(boolean unconditional) {  
    ...  
}  
...
```

**2** Implemente cada um dos métodos acima



## Instala

(Dependente de cada fabricante)



## Sofá

(Bem Acompanhado)

# 3

# Divirta-se !!!!!



# Exemplo Completo

Controle via JMF

Xlet1  
(Visão da Câmera)



Xlet8  
(Seleção de Câmeras)

Xlet2  
(Propaganda)

Xlet3  
(100 m rasos)

Xlet4  
(Salto com Vara)

Xlet5  
(Arremesso de Martelo)

Xlet6  
(Salto em Altura)

Xlet7  
(Lançamento De Dardo)



## **J2ME: Java TV API**

<http://java.sun.com/products/javatv/index.jsp>

## **Artigos sobre Java TV e Exemplos**

<http://java.sun.com/developer/technicalArticles/javatv/index.html>

# Perguntas



**Muito Obrigado  
Muchas Gracias**

**Mauricio Leal**  
**[maltron@nortlam.net](mailto:maltron@nortlam.net)**