



Intelligence Personalized

(An IIT Bombay Research Spin-off)



Search, Personalization and Recommendation

Enabling an N=1 user experience

Powered by MoogaSM

iKen Solutions Pvt. Ltd.
3rd Floor, SINE, CSRE Building
Indian Institute of Technology, Bombay
Powai, Mumbai - 400076
Phone: +91 22 25722675
<http://www.ikensolutions.com>

About What's On India

- ❑ What's On India is India's Premier TV Guidance & EPG (Electronic Program Guide) Company working with all major TV channel networks and TV distribution platforms.
- ❑ With a vision to enable multi-platform, personalized search, discovery and guidance of TV content, they run India's largest multi-platform, multi-device Consumer Search & Guidance service for TV Video Content.
- ❑ What's On India has designed a proprietary, indigenous India-specific EPG Production Platform that integrates Programming information from hundreds of TV channels. Their enrichment and transformation makes this information seamlessly reach consumers through Set-Top-Boxes, Online and Mobile.

Background

- ❑ With over 900 TV channels and over 9000 daily programs, it is virtually impossible for a viewer to find out programs of his/her interest.
- ❑ Channels find it even more difficult to promote "all" their programs to the "relevant" viewers. WOI has tried to bridge this gap by offering a platform that brings in TV channels and viewers/Cable operators at a common place where in a possible mapping between programs and viewers could be achieved.
- ❑ In order to have a leading edge from their competitors, they were looking out for an engine that could analyze user's transactions in order to understand patterns, user behaviors and other details so as to make their web/TV interface more intelligent and dynamically adaptive. The solution demanded an intelligent middle-ware that could talk to content database, analyze data and pick up the most appropriate program for every user individually.

Challenges/Requirements

- ❑ WOI wanted a way to promote the Best content at the Best time to the most Appropriate user from the TV Guide so that all contents could be made “visible”
- ❑ A means to learn what people are watching/fetching information on and give personal touch to each individual who would access the TV guide. They wanted individual preferences to be incorporated in recommendations of programs
- ❑ Addressing these issues required a powerful Personalization and Recommendation framework which could not only adapt to an individual’s taste but could also understand Wisdom of Crowd and Commonalities amongst users. One of the challenges that iKen Solutions faced was to develop a self-learning solution which could work in real-time and take care of item/content filtering, collaborative filtering and adaptation to individual interests.
- ❑ WOI also wanted a supreme Search algorithm that could let its users get to the desired contents on the first result page itself.
- ❑ Above all, they wanted that the composite solution (Search, Personalization & Recommendation) should be able to work seamlessly and be integrated with their existing CMS without restructuring their database schemas and contents. They also wanted to be able to configure and change the system based on their requirements (such as changing business rules, etc.) with minimum down time.

Solution

- ❑ **Mooga** is a hybrid of Artificial Intelligence (AI) Techniques such as Rule Based Engine (RBE) and Case-Based Reasoning (CBR), where the RBE acted as a host system helping in [a] Personalization and [b] Configuring and controlling the CBR Engine at run-time
- ❑ **Use of hybrid Rule Based Engine:** RBE helped to take care of business logic adapted to individual tastes and interests. It would invoke the CBR engine and find out the best contents possible for the individual user based on business policies.

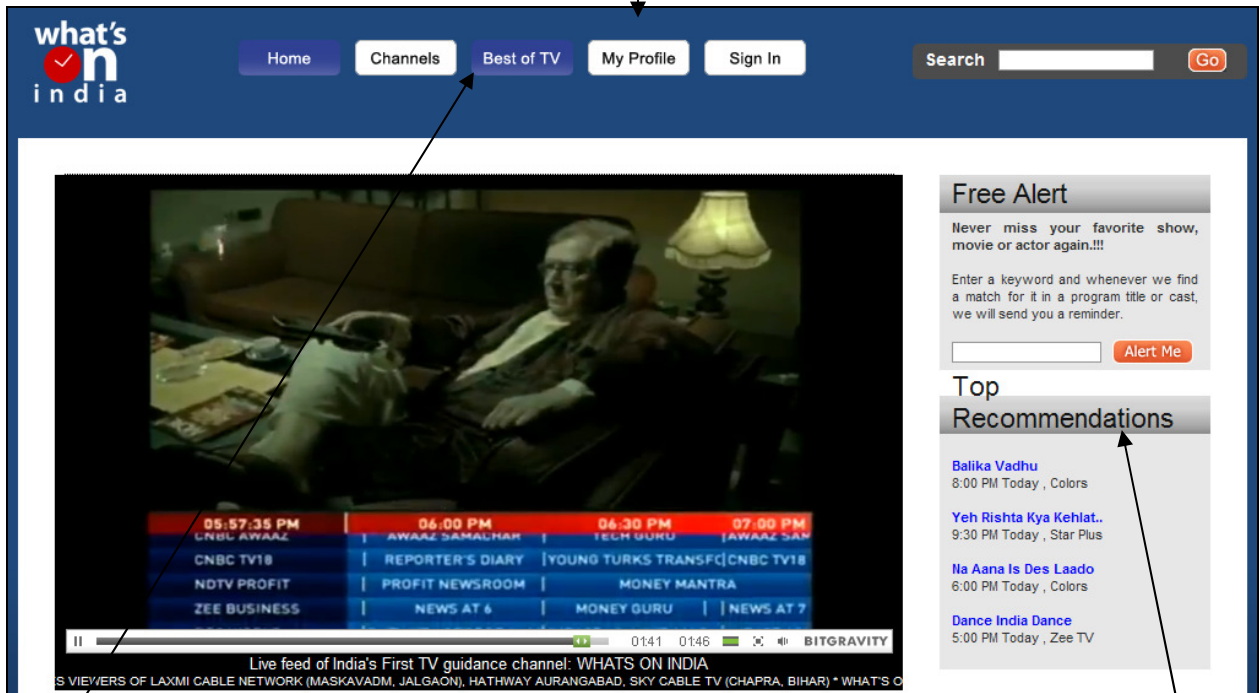
- ❑ **DB Integration:** iKen Studio facilitated easy integration with existing databases through XML mapping and transformation.
- ❑ **P&R (Personalization & Recommendation)** system was configured to get the best results based on item filtering and social filtering (Collaborative filtering). iKen Studio's P&R engine has an in-built mechanism to automatically set similarities based on past transactions (browsing, clicks, downloads, etc.) and business rules.
- ❑ **Search:** A self-learning (based on ranking) phonetically-enabled search mechanism that gets better with time.
- ❑ **Web integration through Web Services:** Various generic web services were added to access iKen Studio APIs like running collaborative filtering, retrieving the next best contents for user, notifying transactions, etc.

Why WOI chose Mooga

- ✓ Mooga integrated as a thin layer on top of their existing system without touching their CMS, Billing system, etc.
- ✓ No cold-system start problems encountered
- ✓ Holistic and 360-degree view to true personalization

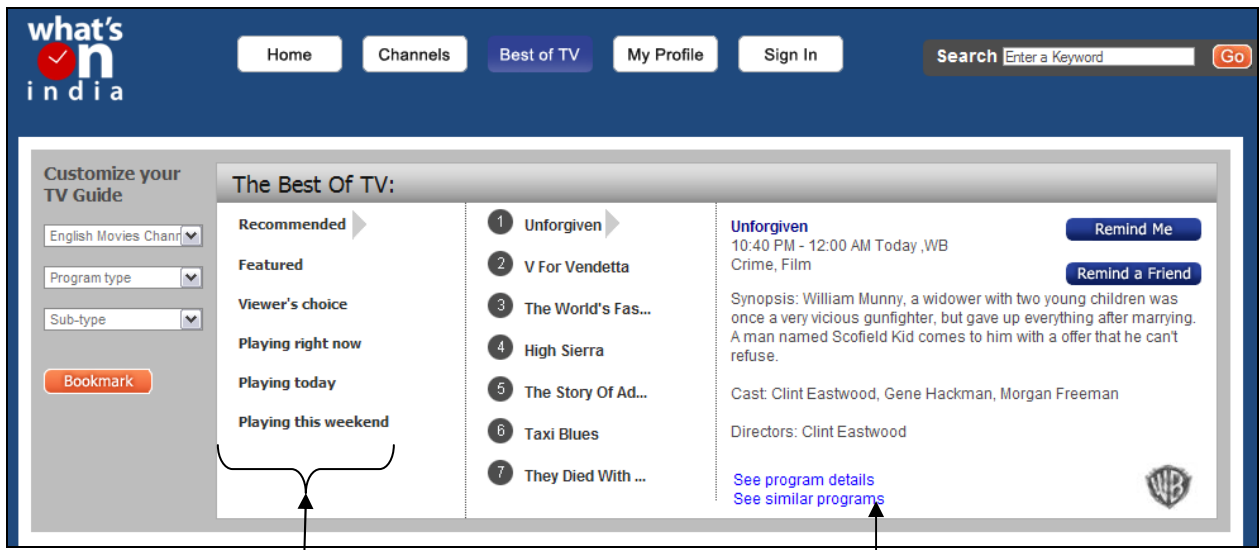
Snapshots of WOI's Portal

This is where Personalization will be provided by Mooga as part of Phase 2



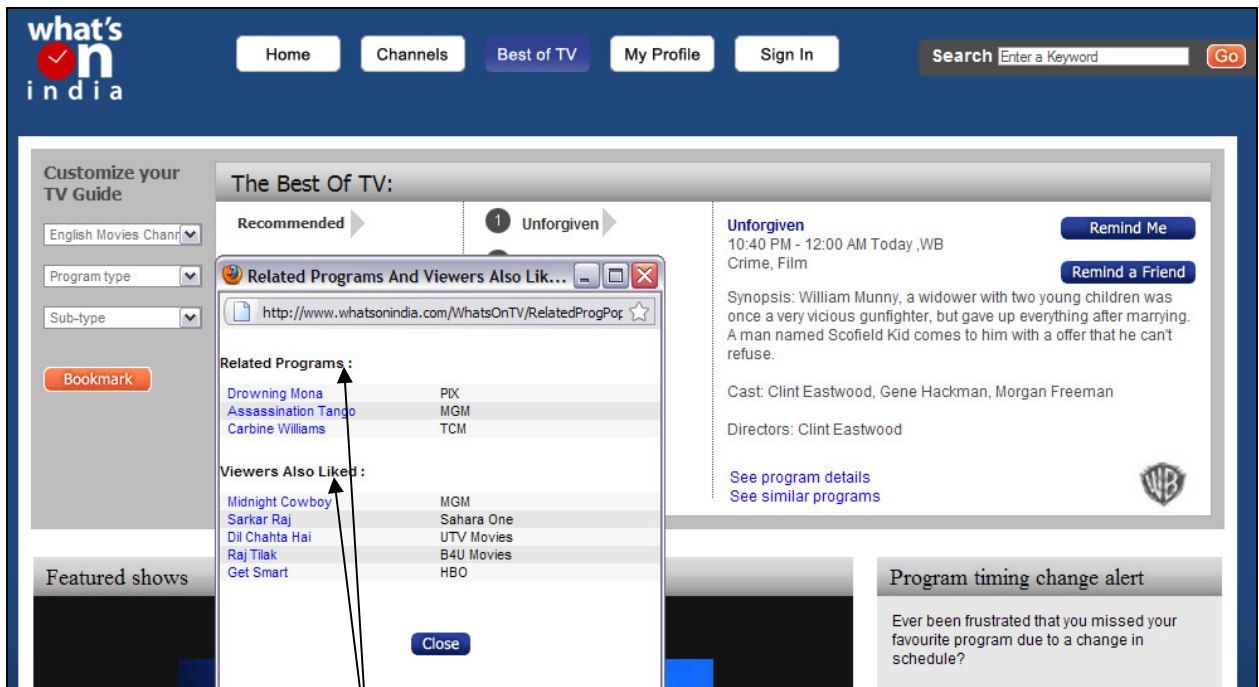
Viewer clicks on this tab to see what are the popular programs and lands on the following page

Global Recommendations on the home page are as of now "pushed" by WOI based on heuristics



For all programs under each of these categories, recommendations are powered by **Mooga**

Mooga powered list of Recommendations for the current user (taking into consideration Wisdom of Crowd, Collaborative filtering, Popularity, Linearity, Recency, etc.)



Mooga-powered list of **Related Programs** and what **Viewers Also Liked** for "Unforgiven". It is based on Wisdom of Crowd, Collaborative filtering, etc.

Unforgiven

Film, Crime
English

Synopsis:
William Munny, a widower with two young children was once a very vicious gunfighter, but gave up everything after marrying. A man named Scofield Kid comes to him with a offer that he can't refuse.

Director:
Clint Eastwood

Cast:
Clint Eastwood, Gene Hackman, Morgan Freeman

Schedule: [Remind Me](#) [Remind a Friend](#)

10:40 PM - 00:00 AM, Today WB
00:00 AM - 01:20 AM, Tomorrow WB
06:00 AM - 08:30 AM, Tomorrow WB
[More....](#)

Your Feedback:

[My Favourite](#)

Add your vote. It counts! ▾

Similar Programs

- 1 [Drowning Mona](#)
- 2 [Assassination Tango](#)
- 3 [Carbine Williams](#)

Viewers Also Liked

- 1 [Midnight Cowboy](#)
- 2 [Sarkar Raj](#)
- 3 [Dil Chahta Hai](#)
- 4 [Raj Tilak](#)
- 5 [Cet Omert](#)

Mooga-powered list of **Related Programs** and what **Viewers Also Liked** on the program detail page of "Unforgiven"

Further Stages of the Project

- Personalization of contents for each registered user**
 - To be completed by end of March, 2010
- Search**
 - WOI to use our expertise in search for their portal (tentatively post implementation of Personalization)

URLs

URLs for the Web site: The following URL may be copy-pasted on Web browser to get a feel of how Recommendations work on WOI's portal

<http://www.whatsonindia.com/WhatsOnTV/>

The following URL may be checked for have an understanding about our client

<http://www.whatsonindia.com/WhatsOnTV/Corporate/>