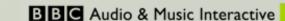
Nicholas Humfrey and Patrick Sinclair

Software Engineers, BBC Audio and Music Interactive

The Web as a Content Management System on the BBC Music Beta



The BBC has a long and distinguished track record of bringing music to new audiences. From shows like:

with jools Holland

Home Shows Video Artists Tickets Newsletter

Later Live... with Jools Holland

Broadcast live from BBC Television Centre, Jools Holland presents new, legendary and relatively unknown artists in performance



Go to homepage



Coming up

Tuesday, 22:00 on BBC Two

Series 34 Episode 4

Jools is joined by Depeche Mode, Lily Allen, Sonic Youth, Raphael Saadiq and Taj Mahal.

1 more programme coming up in the next 7 days.

More like this

Find related BBC Two programmes.

Categories

GENRE:

Music

Performances & Events

Most recent on BBC iPlayer



Later with Jools Holland

PROMS 2009

THE WORLD'S GREATEST CLASSICAL MUSIC FESTIVAL
17 JULY - 12 SEPTEMBER 2009

Home

What's On

Venues

Booking

Broadcasts

About

Take Part

Share

BBC Proms 2009

The biggest ever Proms season starts on Friday 17 July and runs until Saturday 12 September.

76 concerts at the Royal Albert Hall & 19 chamber recitals at Cadogan Hall.

Find out What's On this year.



Welcome to the Proms



Everything you need to know: What are the BBC Proms? When did they begin? Where is the Royal Albert Hall? With video guides.

you need to 17. 24. 31. 07. 14. 24. 28. 04. Week 1: 17-23 July 2009

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What's On

100 concerts!
76 Proms at the Royal

Albert Hall and 19 chamber concerts at Cadogan Hall. Plus 5 Proms in the Park.

Inspire 2009



The 2009 BBC Proms Inspire Young Composers' Competition is now open for entries!

April Preview Concerts



Four special concerts to mark the launch of BBC Proms 2009, with a chance to hear about this year's Proms from Director Roger Wright.

Listen online



2009 Calendar

S	M	Т	W	Т	F	S
July						
					17	
19	20	21	22	23	24	25
26	27	28	29	30	31	
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See also

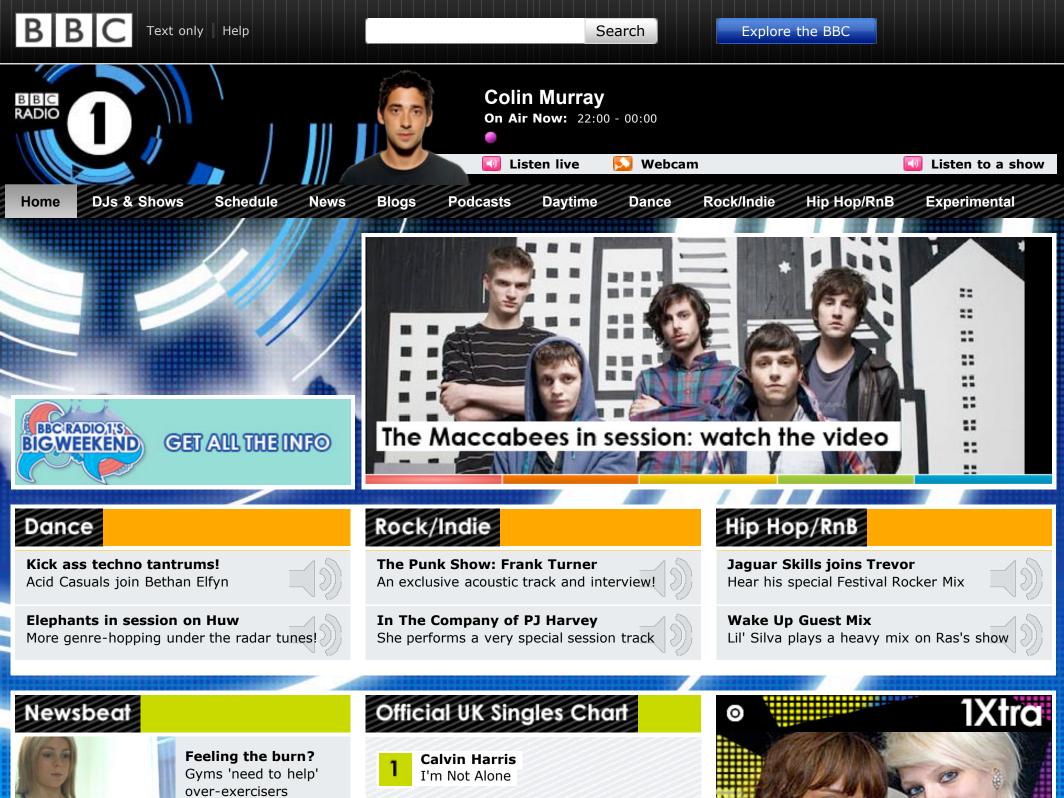
6 7

On Radio 3

Lunchtime Concert

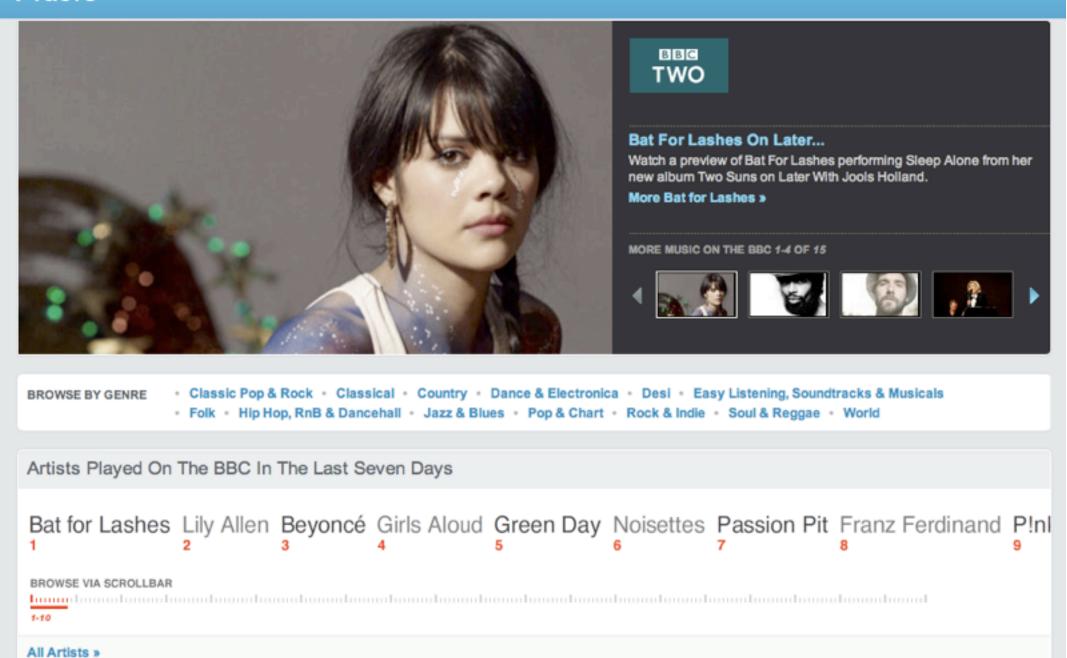
8 9 10 11 12

to the BBC Proms



And our radio networks such as Radio 1

Music BETA



About a month ago we launched the new BBC Music Beta.

The aim of the site is to provide a comprehensive guide to all this fantastic music content available across the BBC.

Music BETA

BBC Music > Artists > Bat for Lashes

Bat for Lashes

Bat for Lashes is a performance name for the person Natasha Khan.





Now On The BBC

Bat For Lashes on Later...

Watch a preview of Bat For Lashes performing Sleep Alone on Later With Jools Holland.



Latest News Stories

NEWS FROM THE BBC

Batwoman's back

Thu 9 Apr 2009 09:07

Bat For Lashes, aka Natasha Khan, reveals her love of David Attenborough

Glittering return

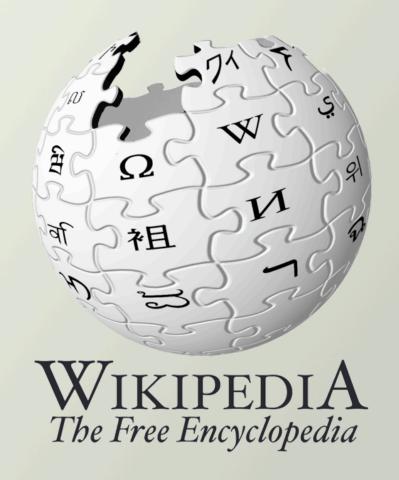
In particular, we are publishing a page for EVERY artist where we can highlight and link to their activities on the BBC.

y.



Built upon Open Data Repositories





BBC Audio & Music Interactive

This is built using existing, open data repositories: MusicBrainz and Wikipedia.

Structured data

Artist:	Ø	Bat for Lashes			
Release:			¥		Guess case
Track:	1		₩	7:77	Guess case
Track:	2		Q	7:??	Guess case
Track:	3		₩	7:77	Guess case
Track:	4		T	7:77	Guess case
Track:	5		T	7:77	Guess case
Track:	6 🖺		v	7:??	Guess case
Track:	7			?:??	Guess case
Track:	8 🖫		Q	?:??	Guess case
Track:	9 🖺		중	?:??	Guess case
Track:	10		€ S	?:??	Guess case
					Guess all
At	tributes:	Select type \$ Select status \$			[help]
La	anguage:	Select language \$ Guess language/scrip	t »		[help]
		Select script 💠			
	Script:	Hint: If this release/CD is in English, please select the Latin scrip Show full lists	ot.		[help]
		SHOW IUIT HSUS			

MusicBrainz is basically an editable database for the music domain. It covers artists, releases, tracks and record labels.

For example, this is the form for adding a new release – as you can see, the data is very well structured.

Edits are peer-reviewed

Editor: SonnyJD Edit ID: 10371812 Expired: 2009-04-23 05:10:16 UTC	Type: © Add Relationship Artist: ② Dominique Zahnd	[Add note]			
	Add: Dominique Zahnd collaborated on Lipitkas & Zahnd	O O O O Yes No Abs None			
Notes:					
JonnyJD: from booklet of Electro Re	evenge 2009-04	1-09 05:10:16 UTC			
Editor: B outofcontrol222 Edit ID: 10371824 Language: English Expired: 2009-04-23 05:16:31 UTC	Type: @ Add Release Artist: @ Heartbreak Release: @ We're Back	[Add note]			
	New: We're Back	O O O O Yes No Abs None			
Notes:					
outofcontrol222: http://www.discogs.com/Heartbreak-Were-Back/rele 2009-04-09 05:16:31 UTC					
	- and material analytic				
Editor: <u>A</u> caller#6 Edit ID: 10371825 Expired: 2009-04-23 05:16:48 UTC	Type: @ Add Relationship Artist: 2 Itamar Ziegler	[Add note]			
	Add: 1 Itamar Ziegler has a MySpace page at http://www.myspace.com/itamarziegler [info]	O O O O Yes No Abs None			
Editor: a caller#6 Edit ID: 10371829 Expired: 2009-04-23 05:17:59 UTC	Type: © Add Relationship Artist: 2 Itamar Ziegler	[Add note]			

All edits to MusicBrainz are peer-reviewed: users can vote against an edit if they disagree with it.

So the quality of the data is generally high, especially around popular artists where many fans keep a close eye on new edits.

Active user community

Most active editors in the last week (open and accepted edits)

Editor	Edits	
MeinDummy	2907	[open edits]
drsaunde	1048	[open edits]
fred576	1013	[open edits]
NAvAP	943	[open edits]

Most active voters in the last week (yes and no votes only)

Voter	Votes	
voiceinsideyou	1022	[open edits]
chabreyflint	931	[open edits]
drsaunde	744	[open edits]
ym	594	[open edits]

There's an incredibly active user community, very busy adding new data to the site.

These are the number of edits individual users have entered in the last week - one user alone, "MeinDummy" has contributed nearly 3000 edits

Web scale identifiers*

10000730-525f-4ed5-aaa8-92888f060f5f

musicbrainz.org/artist/:guid www.bbc.co.uk/music/artists/:guid

* http://bit.ly/ytB6d

BBC Audio & Music Interactive

A curious feature of MusicBrainz is their use of these rather long, opaque identifiers for their resources

For example, an artist page in musicbrainz is musicbrainz.org/artist/:guid And we're reusing these identifiers on our site, so the artist profile on BBC is: www.bbc.co.uk/music/artists/:guid

This what people refer to "Web scale identifiers" - the way DBPedia uses Wikipedia article titles is the best example of this.

Michael Smethurst, an Information Architect at the BBC has written a really good blog post about this.

And this reuse makes it really easy to build mashups and join this data with other sources on the web - you just take an artist ID and query other applications using MusicBrainz like last.fm

MusicBrainz Licensing



© Core data

- artists, releases, tracks, labels
- advanced relationships

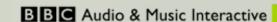


@@@@ Remainder of data

annotations, tags, third party data



Live data feed

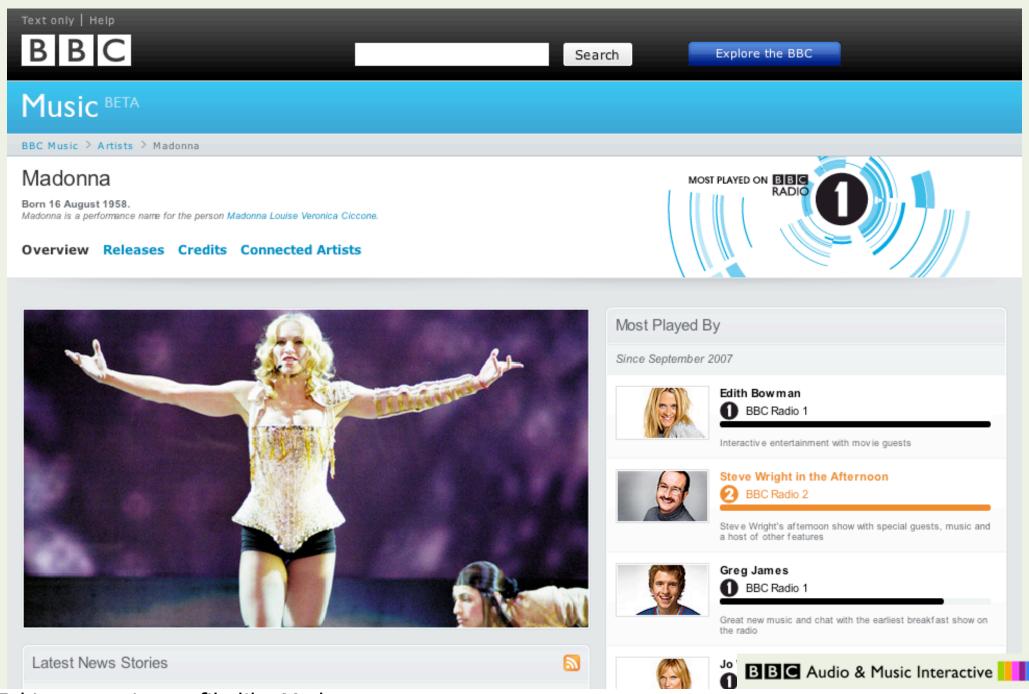


In terms of licensing Core data - Public Domain Remainder - Creative Commons Attribution-NonCommercial-ShareAlike 2.0 license

MusicBrainz provides a live data feed so that people can host their own MusicBrainz mirrors - any edits made in MusicBrainz appear on BBC Music within a couple of hours.

As the LiveDataFeed includes both datasets, the highest license needs to be applied to these data packets. So comes under Creative Commons license

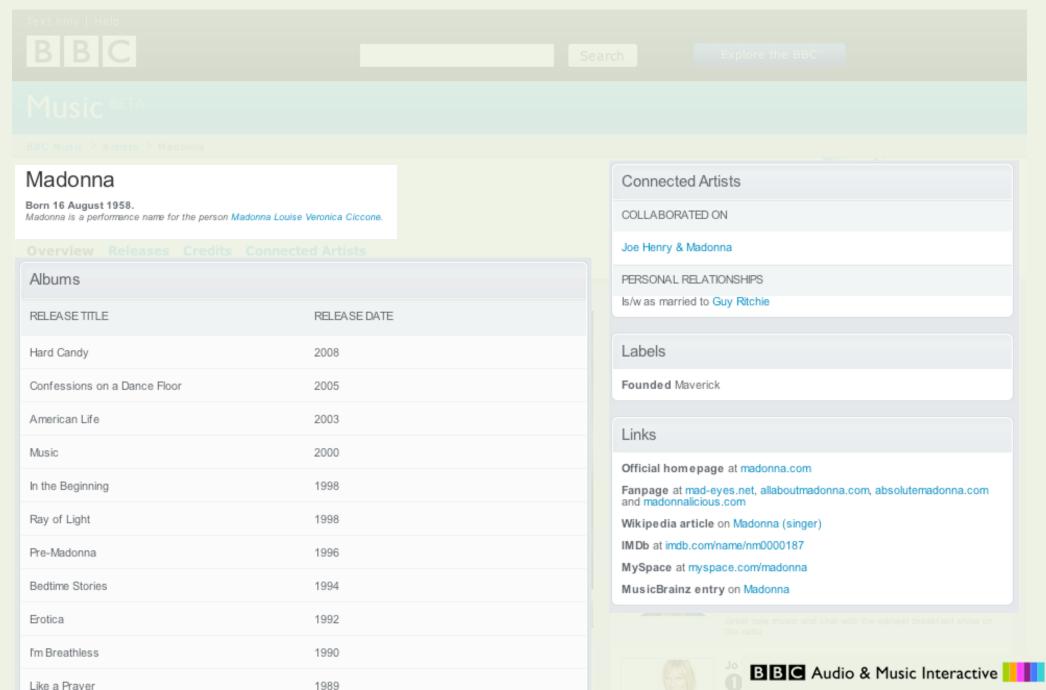
Artist profile - bbc.co.uk/music/artists/:guid



Taking an artist profile like Madonna

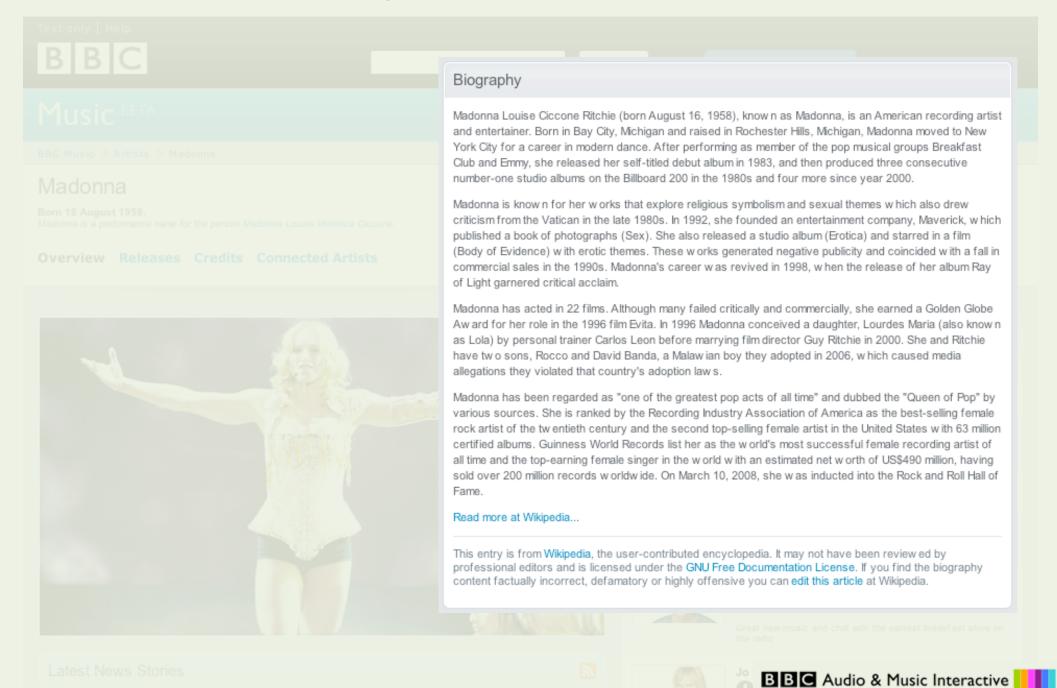
Music

Artist profile - data from MusicBrainz



The discography, artist and label relatiotionships and links come from MusicBrainz

Artist profile - biography extract from Wikipedia



If an artist's profile in MusicBrainz has been given a Wikipedia link, we are able to fetch the article abstract from Wikipedia.

Using a pretty popular pubsub mechanism (involving IRC!) we keep the abstract up to date in realtime - an edit in Wikipedia will appear on BBC Music in a few seconds.

The Web as a Content Management System

BBC editorial staff are contributing to MusicBrainz and Wikipedia instead of internal systems

BBC Audio & Music Interactive

So when we say that we are using the web as a content management system, we mean that BBC staff are editing MusicBrainz and Wikipedia instead of an internal tool

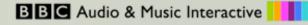
These guys are domain experts: their job is to research and publish all sorts of things about music. (even if they're a bit obsessed by jazz).

They are in a position where they can make some really valuable expert contributions to the MusicBrainz and Wikipedia projects

Scale

455,465 artists

682,473 releases 7,851,093 tracks 31,112 labels



And because these are open data sets powered by their communities on the web, we are able to publish many more artist pages than would otherwise be possible!

We're now publishing over 450,000 artist profiles! We are able to support a wider diversity of music, much more than if we were to maintain our own data source!

Search

Music BETA

BBC Music > Artists > Isaac Hayes

Isaac Hayes

Born 20 August 1942. Died 10 August 2008. Isaac Hayes performs as Chef.





Biography

Isaac Lee Hayes, Jr. (August 20, 1942 – August 10, 2008) was an American singer-songwriter, actor and musician. Hayes was one of the main creative forces behind southern soul music label Stax Records, where he served as both an in-house songwriter and producer with partner David Porter during the mid-1960s. Hayes & Porter were named to the Songwriters Hall of Fame in 2005 in recognition of their string of successful hit songs for Sam & Dave, Carla Thomas and others In

Played By

Since December 2008



Sarah Kennedy

BBC Radio 2

The Dawn Patrol with great music, the morning papers and a moment to Pause for Thought.



Jeremy Vine

BBC Radio 2

Talks to the people who make the headlines.



Ken Bruce

BBC Radio 2

The best in music every weekday with Ken Bruce, with live sessions



Janice Long

BBC Radio 2

The best live sessions, chat, and the finest music to keep you going through the night.

And the community ensures that our data doesn't grow stale. Whenever an artist passes away or a famous band breaks up it's reflected on our page within a few hours

Credit the source

Links

Official homepage at hermandune.com

Wikipedia article on Herman Düne

MusicBrainz entry on Herman Düne

Links come from MusicBrainz. You can add or edit information about Herman Düne at musicbrainz.org. Find out more about our use of this data.

Read more at Wikipedia...

WIKIPEDIA This entry is from Wikipedia, the user-contributed encyclopedia. It may not have been reviewed by professional editors and is licensed under the GNU Free Documentation License. If you find the biography content factually incorrect, defamatory or highly offensive you can edit this article at Wikipedia. Find out more about our use of this data.

BBC Audio & Music Interactive

We credit our sources so it's clear to our users where the data is coming from. As we only publish the abstract users go over to wikipedia if they want to know more

Encourage users to contribute

Music BETA

BBC Music > Artists > Harmonica Fats

Harmonica Fats

Group.

Biography

We currently have no biography for this artist. You can contribute biographical information for Harmonica Fats to Wikipedia, the user-contributed encyclopedia. If you know that a biography for Harmonica Fats already exists in Wikipedia, you can add a link to Harmonica Fats's entry in MusicBrainz.

More importantly, we encourage our users to get involved and contribute to the datasets themselves.

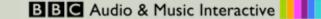
For example, the band "Harmonica Fats" hasn't been given a Wikipedia URL so we can't pull in a biography.

We ask our users if they know a Wikipedia article exists to add it to MusicBrainz

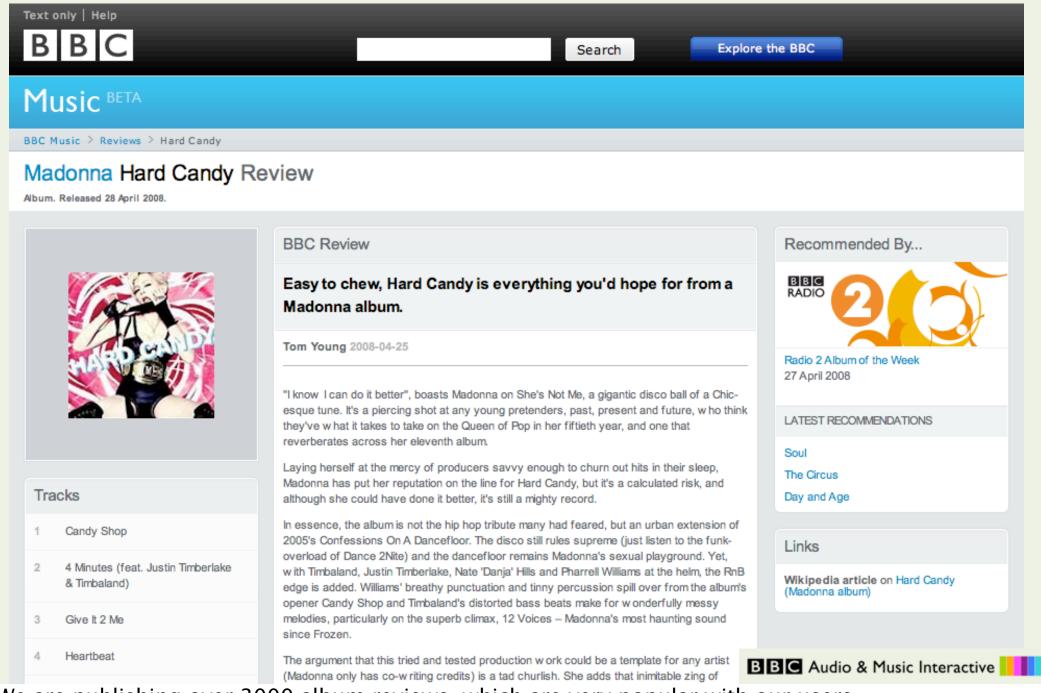
And as the site becomes established, some of these users might be the record labels, music promoters or even band members themselves.



Content from the BBC



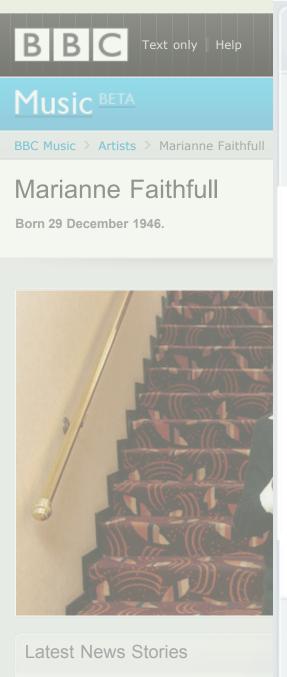
Reviews - bbc.co.uk/music/reviews/:url_key



We are publishing over 3000 album reviews, which are very popular with our users. We find lots of users commenting on the reviews.

These reviews are licensed under a Creative Commons Attribution Non-commercial Share-a-like license.

Artist profile - content from the BBC



Now On The BBC

BBC Four Sessions - Marianne Faithfull

Marianne Faithfull performs in front of an intimate audience at LSO St Luke's London.



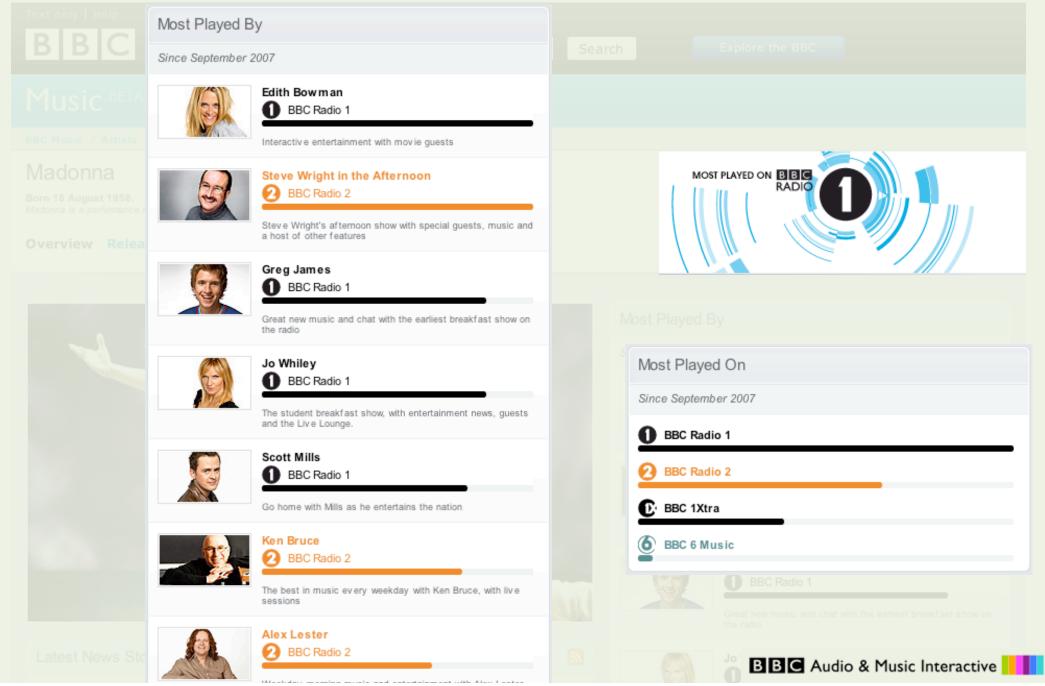
LSO

Marianne Faithfull on Later with Jools Holland

Marianne Faithfull performs and chats to Jools on Later.

Featured content can be promoted on an artist page, for example when they perform live on a BBC show.

Artist profile - content from the BBC



A fun feature on the site is that for each artist played by the BBC we display a chart of the shows that played that artist the most.

The network or station that played the artist the most gets to "own" their profile with a large branding graphic.

For the BBC, this is the most important aspect of the site: it enables our users to discover our most valuable asset: our programmes.



Wake up to Wogan

Weekdays 0730 - 0930





Availability:

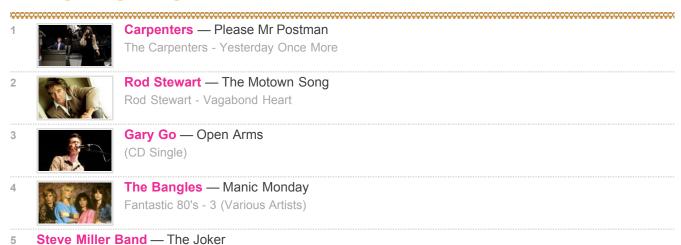
6 days left to listen

Listen (Duration: 120 minutes)

Last broadcast Yesterday, 07:30 on BBC Radio 2.

Ease into the day with Terry Wogan. Includes Pause for Thought.

TRACKLISTING



More details

An episode from

Wake Up to Wogan

Website

Go to the homepage for 'Wake Up to Wogan'

Duration

120 minutes

More like this

Find related BBC Radio 2 programmes.

Categories

GENRES:

■ Music Classic Pop & Rock

🝱 Music

Easy Listening, Soundtracks & Musicals

Music ▶ Pop & Chart

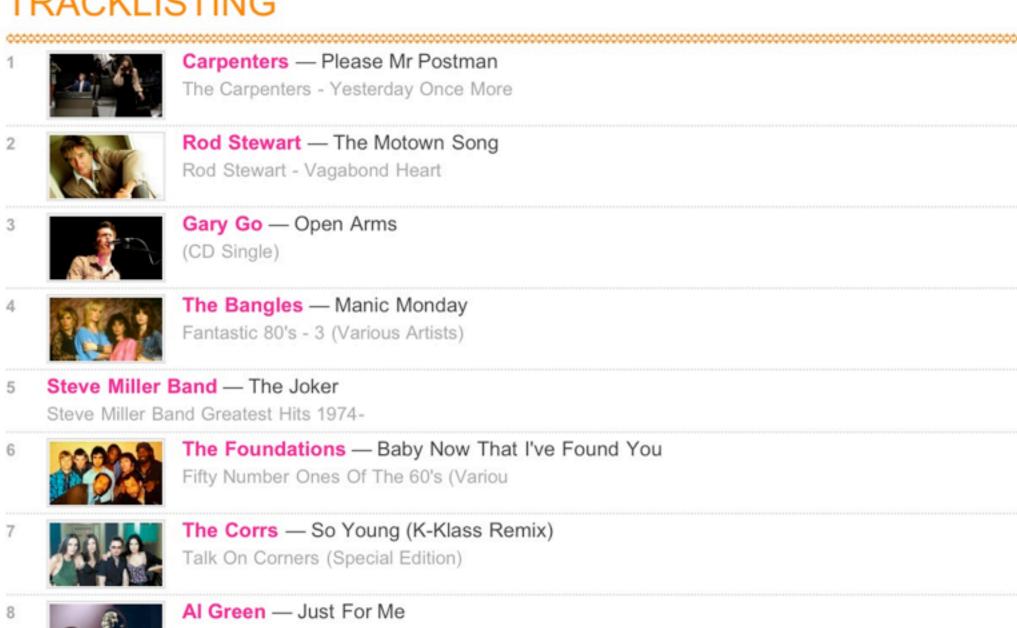
FORMAT:

Discussion & Talk

On the programmes side, we are publishing clickable tracklist for radio shows.

For example, on this Wake up to Wogan episode each song on the tracklist has...

RACKLISTING



Lay It Down

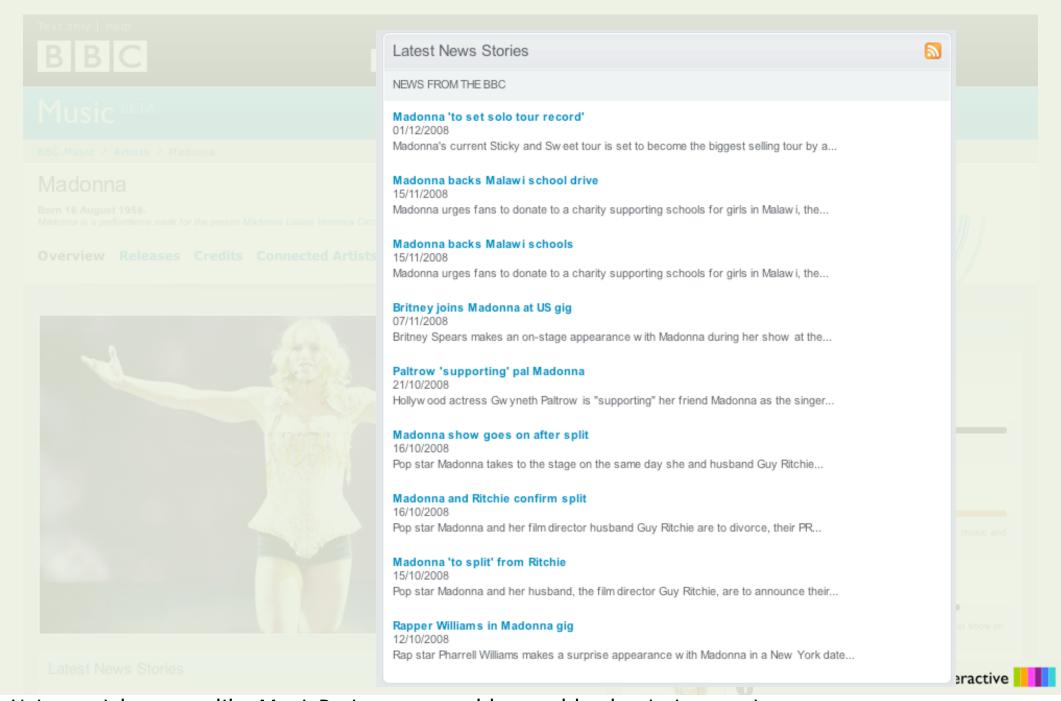
9

Sam Cooke — Having A Party Sam Cooke - The Man & His Music

Vou Might Nood Comphady a link to the artist profile and an image if it is available, as well details about the song.

This has gone live on Radio 2, other networks will follow over the next few months.

Artist profile - content from the BBC



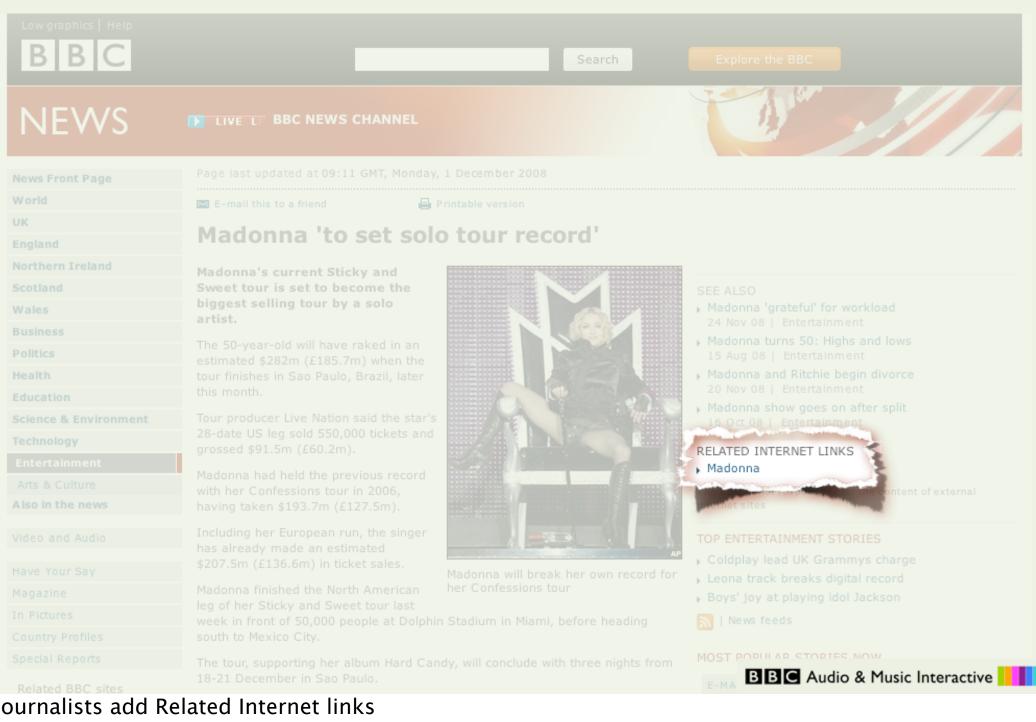
Using a rich source like MusicBrainz we are able to add value in interesting ways. We publish a news feed for each artist, so here you see news stories about Madonna. And it's done automatically by exploiting the link information in MusicBrainz.

Artist profile - content from the BBC



We found that on many news stories...

Artist profile and news stories



Journalists add Related Internet links

Artist profile and news stories



Like a link to the artists' homepage

Artist profile and news stories



In MusicBrainz, we know Madonna has that home page – so we can reliably associate this news story with the Madonna profile.

This really simple approach is pretty accurate as it is based on the link information added by our editorial staff

We're also doing this for all of the BBC Blogs too (DJs, shows, Chart Show).

before, editors were tagging individual stories to artists news journalists linking to music pages – not joined up, pages gets stale now they simply add links to MusicBrainz, and journalists are encouraged to link to artists – improving the web

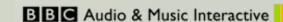
We're also encouraging them to link directly to our artist profile pages, which will improve our ranking in the search engine rankings

Also links to artist resources can be messy (index.php, bad myspace, bad homepage), so linking to the artist profile will be more stable (links are maintained by the community in MusicBrainz)

Our website is the API

Persistence
Linked open data
RESTful
One web

http://www.bbc.co.uk/music/developers



We provide an API for our site

Because of the way we design our sites, making sure we get our resource design right, our website is our RESTful API – we embrace the "One Web" idea.

Find out more here: bbc.co.uk/music/developers

Most resources are available in different representations: HTML, XML, JSON and RDF - so we're contributing to the Linked Data cloud.

We are using a very simple, pragmatic approach to publish our RDF: it's implemented using a template in the view of our MVC framework. We support Content Negotiation for the RDF.

```
<rdf:RDF xmlns:rdf</pre>
                        = "http://www.w3.org/1999/02/22-rdf-syntax-ns#"
                        = "http://www.w3.org/2000/01/rdf-schema#"
         xmlns:rdfs
                        = "http://www.w3.org/2002/07/owl#"
         xmlns:owl
                        = "http://purl.org/dc/elements/1.1/"
         xmlns:dc
                        = "http://xmlns.com/foaf/0.1/"
         xmlns:foaf
                        = "http://purl.org/vocab/relationship/"
         xmlns:rel
         xmlns:mo
                        = "http://purl.org/ontology/mo/"
                        = "http://purl.org/stuff/rev#"
         xmlns:rev
<rdf:Description rdf:about="/music/artists/cc197bad-dc9c-440d-a5b5-d52ba2e14234.rdf">
  <rdfs:label>Description of the artist Coldplay</rdfs:label>
  < foaf:primaryTopic rdf:resource = "/music/artists/cc197bad-dc9c-440d-a5b5-d52ba2e14234#artist"/>
</rdf:Description>
<mo:MusicGroup rdf:about="/music/artists/cc197bad-dc9c-440d-a5b5-d52ba2e14234#artist">
  <foaf:name>Coldplay</foaf:name>
  <owl:sameAs rdf:resource="http://dbpedia.org/resource/Coldplay" />
  <mo:image rdf:resource="/music/images/artists/7col_in/cc197bad-dc9c-440d-a5b5-d52ba2e14234.jpg" />
  <foaf:page rdf:resource="/music/artists/cc197bad-dc9c-440d-a5b5-d52ba2e14234.html" />
  <mo:musicbrainz rdf:resource="http://musicbrainz.org/artist/cc197bad-dc9c-440d-a5b5-</pre>
d52ba2e14234.html" />
  <mo:homepage rdf:resource="http://www.coldplay.com/" />
  <mo:fanpage rdf:resource="http://www.pleasureunit.com/coldplay/index.php" />
  <mo:fanpage rdf:resource="http://wiki.coldplaying.com" />
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  <mo:myspace rdf:resource="http://www.myspace.com/coldplay" />
  <mo:online_community rdf:resource="http://www.twitter.com/coldplay" />
  <mo:member rdf:resource="/music/artists/18690715-59fa-4e4d-bcf3-8025cf1c23e0#artist" />
  <mo:member rdf:resource="/music/artists/d156ceb2-fd90-4e82-baea-829bbdf1c127#artist" />
  <mo:member rdf:resource="/music/artists/6953c4db-7214-4724-a140-e87550bde420#artist" />
Here's some of our RDF, please ask if you want me to go into more detail!
```

<?xml version="1.0" encoding="utf-8"?>

Acknowledgments

Tom Scott
Michael Smethurst
Yves Raimond
BBC Music Discovery team
http://www.bbc.co.uk/music/developers/are

patrick.sinclair@bbc.co.uk nicholas.humfrey@bbc.co.uk

