



# CoSyne

## Multilingual Content Synchronization with Wikis

A. Bronner  
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Netherlands Institute for Sound & Vision

Wikimania 2011, Haifa Israel



# Introduction

- ◆ CoSyne: Multilingual Content Synchronization with Wikis
- ◆ Research & Development Project, Co-Funded by the European Union under the 7<sup>th</sup> Framework Programme (FP7- ICT)
- ◆ March 2010 – February 2013

The screenshot shows the European Commission ICT Research in FP7 website. The header includes the European Commission logo and the text 'European Commission ICT Research in FP7'. Below the header is a navigation breadcrumb: 'European Commission > CORDIS > FP7 > ICT > Projects > Projects'. A sidebar on the left contains links for 'Home', 'Programme', 'Participating Projects', and 'Newsroom'. The main content area is titled 'ICT Information and Communication Technologies' and 'Projects'. It lists one project: 'COSYNE: Multi-Lingual Content Synchronization for Wikis', funded under the 7th FWP (Seventh Framework Programme) with a project start date of [2010-03-01]. The project is led by A. Bronner.

University of Amsterdam / Netherlands Institute for Sound & Vision  
Wikimania 2011, Haifa Israel

# Consortium



## ◆ 4 Research Institutions



University of Amsterdam  
(UvA)



Fondazione Bruno Kessler  
(FBK)



Dublin City University  
(DCU)



Heidelberg Institute for  
Theoretical Studies  
(HITS)

## ◆ 3 End User Partners

**DEUTSCHE WELLE** Deutsche Welle



Netherlands Institute for  
Sound & Vision



Wikimedia Netherlands

# Objective

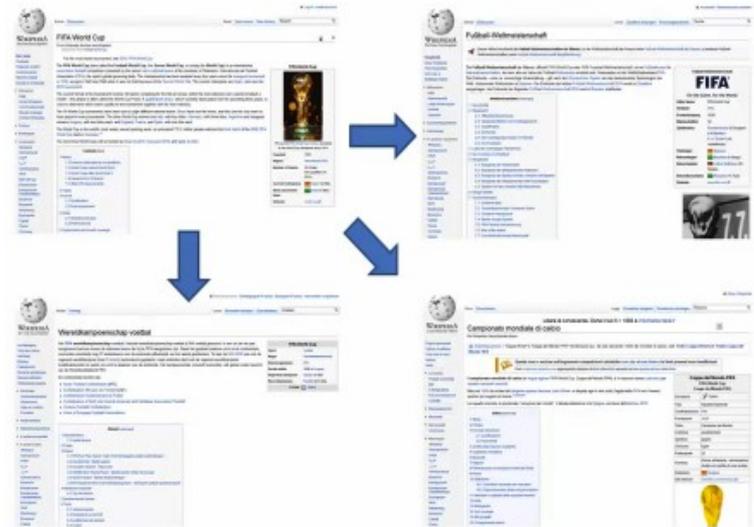


The CoSyne project will develop a system for **synchronizing wiki pages in multiple languages** and for **maintaining consistency while pages are edited** in the different languages.



# Motivation

- ◆ **Why** do we want to synchronize wiki pages?
  - ◆ Keep content consistent across languages
  - ◆ Learn about content in other languages
  - ◆ Expand to new languages



# Soccer Example

- ◆ 28 May 2011, 19:45
- ◆ Wembley stadium, London
- ◆ Barcelona vs. Manchester United
- ◆ Barcelona wins (3:1)
- ◆ Goalkeeper Edwin van der Sar, at the age of 40, plays his last game for Manchester United and retires from football





# Soccer Example

- ♦ 28 May 2011, 20:35 (already at the half-time ???)
- ♦ English user edit: [http://en.wikipedia.org/wiki/Edwin\\_van\\_der\\_Sar](http://en.wikipedia.org/wiki/Edwin_van_der_Sar)
- ♦ “Van der Sar officially retired from football following a 3-1 defeat ...”

Revision as of 18:56, 28 May 2011 (edit)

Ntadams (talk | contribs)

← Previous edit

and [[Fábio Pereira da Silva|Fábio]]. He was included in the [[PFA Team of the Year]], making his third appearance there, others in 2007 and 2008.

On 22 May 2011, **He** played his final game at Old Trafford in a 4–2 victory over [[Blackpool F.C.|Blackpool]] resulting in Blackpool's relegation from the Premier League. He captained United as a farewell treat. Previous to the last game of the Premier League season he had announced that after the [[2011 UEFA Champions League Final]] against [[FC Barcelona|Barcelona]] he **will** retire.

==International career==

Revision as of 20:35, 28 May 2011 (edit) (undo)

ShadowTerror10 (talk | contribs)

Next edit →

and [[Fábio Pereira da Silva|Fábio]]. He was included in the [[PFA Team of the Year]], making his third appearance there, others in 2007 and 2008.

On 22 May 2011, **he** played his final game at Old Trafford in a 4–2 victory over [[Blackpool F.C.|Blackpool]] resulting in Blackpool's relegation from the Premier League. He captained United as a farewell treat. Previous to the last game of the Premier League season he had announced that after the [[2011 UEFA Champions League Final]] against [[FC Barcelona|Barcelona]] he **would** retire.

+  
+  
Van der Sar officially retired from football following a 3-1 defeat to Barcelona in the 2011 UEFA Champions League Final.

==International career==



# Soccer Example

- ◆ 28 May 2011, 22:47
- ◆ Italian user edit: [http://it.wikipedia.org/wiki/Edwin\\_van\\_der\\_Sar](http://it.wikipedia.org/wiki/Edwin_van_der_Sar)
- ◆ “He will play played his last game ... ”

Versione delle 22:39, 28 mag 2011 (modifica)

79.42.63.220 (Discussione)

← Differenza precedente

==== Stagione 2010-2011 =====

Il [[23 dicembre]] [[2010]] annuncia che a fine stagione si ritirerà. Il [[22 maggio]] seguente ha raggiunto le 605 partite di campionato disputate in vent'anni: 226 con l'Ajax, 66 con la Juventus, 127 con il Fulham e 186 con il Manchester<ref>{{Cita newslautore =Massimo Perrone|titolo =Huntelaar a quota 201|pubblicazione = [[La Gazzetta dello Sport|Extra Time]]|giorno = 24| mese = 04|anno = 2011|pagina = 6}}</ref>. **Disputa La** sua ultima partita il [[28 maggio]] nella finalissima di [[Champions League]] allo [[Wembley Stadium (2007)|Stadio Wembley]] contro il [[F.C. Barcellona|Barcellona]].

=== Nazionale ===

Versione delle 22:47, 28 mag 2011 (modifica) (annulla)

151.24.72.126 (Discussione)

Differenza successiva →

==== Stagione 2010-2011 =====

Il [[23 dicembre]] [[2010]] annuncia che a fine stagione si ritirerà. Il [[22 maggio]] seguente ha raggiunto le 605 partite di campionato disputate in vent'anni: 226 con l'Ajax, 66 con la Juventus, 127 con il Fulham e 186 con il Manchester<ref>{{Cita newslautore =Massimo Perrone|titolo =Huntelaar a quota 201|pubblicazione = [[La Gazzetta dello Sport|Extra Time]]|giorno = 24| mese = 04|anno = 2011|pagina = 6}}</ref>. **Ha disputato** la sua ultima partita il [[28 maggio]] nella finalissima di [[Champions League]] allo [[Wembley Stadium (2007)|Stadio Wembley]] contro il [[F.C. Barcellona|Barcellona]], **lasciando il calcio giocato con l'amaro in bocca di una finale perduta e tre gol subiti.**

=== Nazionale ===

A. Bronner



# Soccer Example

- ❖ 28 May 2011, 23:10
- ❖ German user edit: [http://de.wikipedia.org/wiki/Edwin\\_van\\_der\\_Sar](http://de.wikipedia.org/wiki/Edwin_van_der_Sar)
- ❖ “On May 28 2011 he was defeated in his last professional game ... ”

[gesichtete Version]

Version vom 28. Mai 2011, 22:54 Uhr (Bearbeiten)

Nicowa (Diskussion | Beiträge)

[← Zum vorherigen Versionsunterschied](#)

Berbatov strike as United pull away from the pack (4. März 2009)</ref> Er kündigte an, seine Karriere am Ende der [[Premier League 2010/11|Saison 2010/11]] bei Manchester United zu beenden.<ref>guardian.co.uk: [http://www.guardian.co.uk/football/2011/jan/31/edwin-van-der-sar-united Edwin van der Sar motivated to end Manchester United career on a high (31. Jan. 2011)]</ref>

== Nationalmannschaft ==

[ungesichtete Version]

Version vom 28. Mai 2011, 23:10 Uhr (Bearbeiten) (entfernen)

Jan.ruesch (Diskussion | Beiträge)

(→Manchester United)

[Zum nächsten Versionsunterschied →](#)

Berbatov strike as United pull away from the pack (4. März 2009)</ref> Er kündigte an, seine Karriere am Ende der [[Premier League 2010/11|Saison 2010/11]] bei Manchester United zu beenden.<ref>guardian.co.uk: [http://www.guardian.co.uk/football/2011/jan/31/edwin-van-der-sar-united Edwin van der Sar motivated to end Manchester United career on a high (31. Jan. 2011)]</ref>

+

Am 28.05.2011 unterlag er in seinem letzten profispiel im [[Champions League]]Finale gegen den[[FC Barcelona]] mit 3:1.

== Nationalmannschaft ==



# Soccer Example

- ♦ 29 May 2011, 13:33
- ♦ Dutch user edit: [http://nl.wikipedia.org/wiki/Edwin\\_van\\_der\\_Sar](http://nl.wikipedia.org/wiki/Edwin_van_der_Sar)
- ♦ “Van der Sar played his last game as goalkeeper ...”

Versie van 29 mei 2011 om 13:26 (bewerken)

Letterman (Overleg | bijdragen)

Versie van 29 mei 2011 om 13:33 (bewerken) (ongedaan maken)

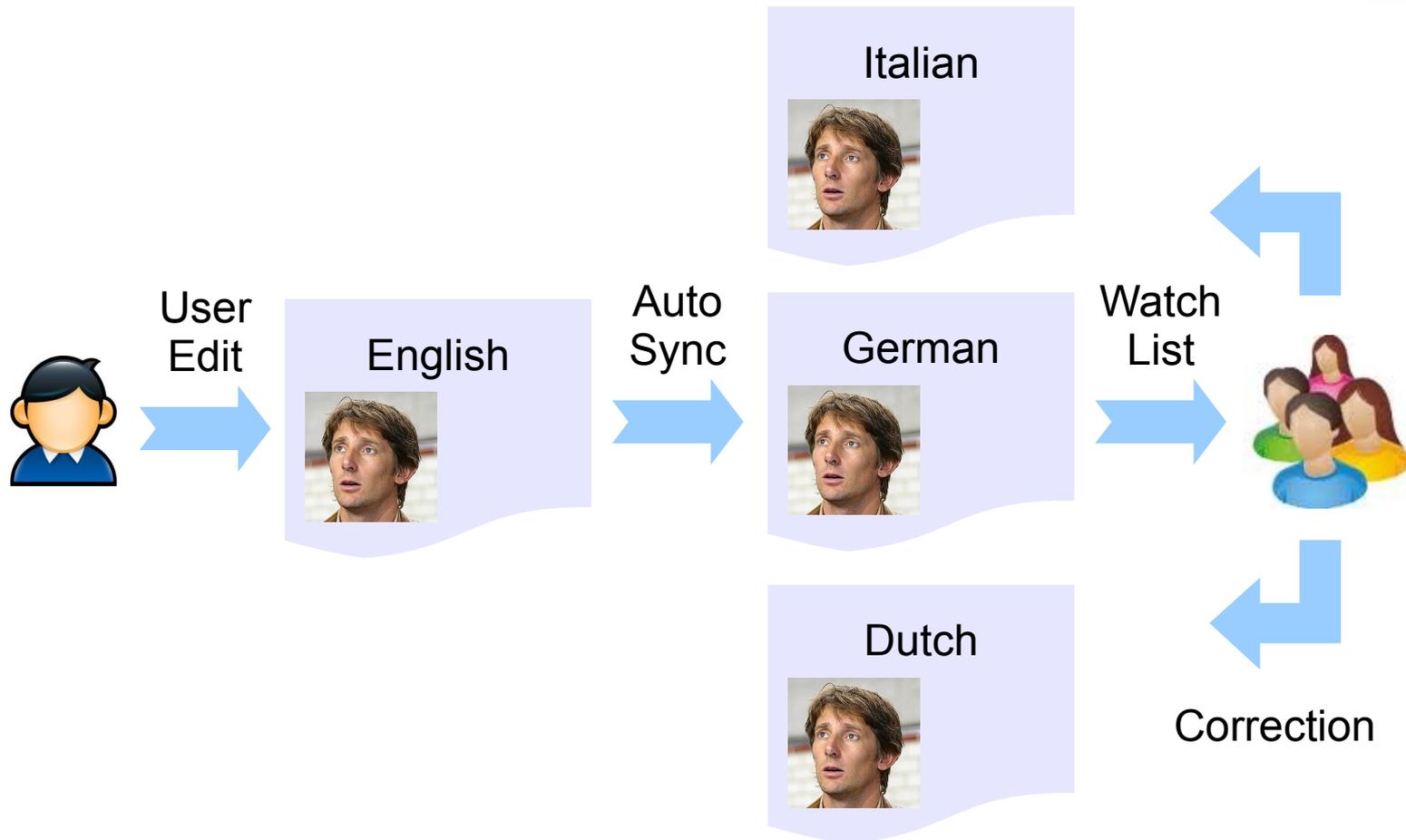
Letterman (Overleg | bijdragen)

+ Van der Sar speelde zijn laatste wedstrijd als profkeeper op 28 mei 2011 in [[Londen]], in het [[Wembley]]stadion, waar Manchester United die zaterdagavond de finale om de [[UEFA Champions League]] tegen [[FC Barcelona]] verloor met 1-3. De toen ruim 40-jarige Van der Sar werd daarmee tevens de oudste voetballer uit de geschiedenis die de eindstrijd haalde om het clubkampioenschap van [[Europa]].

== Loopbaan ==

== Loopbaan ==

# Keep Content Consistent (made-up example)



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# Content from Another Language (made-up example)



WIKIPEDIA  
The Free Encyclopedia

Article Discussion

Read Edit View history

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## Amsterdam

From Wikipedia, the free encyclopedia

Coordinates: 52°22′23″N 4°53′32″E﻿ / ﻿52.37306°N 4.89222°E﻿ / 52.37306; 4.89222

*This article is about the Dutch capital. For other uses, see [Amsterdam \(disambiguation\)](#).*

**Amsterdam** (/ˈæmstərdæm/; Dutch [ɑmstərˈdɑm] <sup>ⓘ</sup> <sup>ⓘ</sup> <sup>ⓘ</sup> <sup>ⓘ</sup>) is the largest city and the **capital of the Netherlands**. The current position of Amsterdam as capital city of the **Kingdom of the Netherlands** is governed by the **constitution** of 24 August 1815 and its successors.<sup>[6]</sup> Amsterdam has a population of 780,152 within city limits, an urban population of 1,209,419 and a metropolitan population of 2,158,592.<sup>[7]</sup> The city is in the **province** of **North Holland** in the west of the country. It comprises the northern part of the **Randstad**, one of the larger

## Nāhuatl

## Dorerin Naoero

## Nederlands → Synchronize

## Nedersaksisch

## नेपाली

## नेपाल भाषा

origin: a dam in the river **Amstel**. Settled as a small fishing village in the ports in the world during the **Dutch Golden Age**, a result of its innovative enter for finance and diamonds.<sup>[10]</sup> In the 19th and 20th centuries, **the city** ed. The 17th-century **canals of Amsterdam** (in Dutch: 'Grachtengordel'),

ave their headquarters there, and 7 of the am was ranked 13th globally on quality of inknow in the Innovation Cities Index 2009.<sup>[14]</sup>

world, is located in the city centre. **Amsterdam's** main attractions, eum, **Stedelijk Museum**, **Hermitage Amsterdam**, **Anne Frank House**, **offee shops** draw more than 3.66 million international visitors annually.

ot be closing their doors to tourists any time soon. A controversial works; this pass would restrict coffee shop cannabis sales to residents of npopular and proponents face stiff opposition from figures such as

Amsterdam's mayor, Eberhard van der Laan, and the Maastricht city council. Others have argued that the plan may indeed violate not only the constitution of the Netherlands but also that of the European Union. It is thus expected that the measure will fail before it is more closely considered. As of July 2011, it is safe to say that no "wietpas" will be implemented until 2015 - at the earliest.<sup>[15]</sup>

**Contents** [hide]

1 History

## Amsterdam

— Municipality/city —



From left to right and top to bottom: Rijksmuseum Amsterdam, Statue in the Vondelpark, Keizersgracht, Zuiderkerk, Royal Palace (Amsterdam), ING House



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# Overlapping Details (Same Info)



Amsterdam

Amsterdam is the largest city and the capital of the Netherlands.



De naam van de stad is afgeleid van de ligging bij een in de 13e eeuw aangelegde dam in de Amstel. De plaats kreeg **stadsrechten** rond het jaar 1300 en groeide later uit tot één van de grootste handelssteden ter wereld in de **Gouden Eeuw**. Bevolkingsgroei leidde vanaf het eind van de 16e eeuw tot **grote stadsuitbreidingen**, waaronder de **grachtengordel**, die op de **Werelderfgoedlijst** is opgenomen en tot de belangrijkste bezienswaardigheden van de stad behoort. Andere attracties in de stad zijn onder meer de musea, zoals het **Rijksmuseum**, het **Stedelijk Museum** en het **Van Gogh Museum**; het **Anne Frank Huis**; het pr



Article Discussion

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## Amsterdam

From Wikipedia, the free encyclopedia

*This article is about the Dutch capital. For other uses, see Amsterdam (disambiguation).*

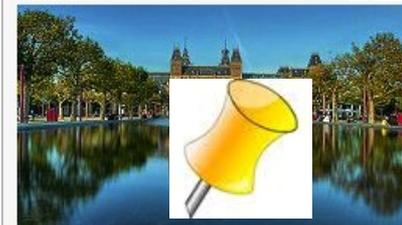
**Amsterdam** (/ˈæmstərdæm/; Dutch [ˈɑmstərˈdɑm] ⓘ<sup>ⓘ</sup> listen<sup>ⓘ</sup>) is the largest city and the capital of the Netherlands. The current position of Amsterdam as capital city of the Kingdom of the Netherlands is governed by the constitution of 24 August 1815 and its successors.<sup>[6]</sup> Amsterdam has a population of 780,152 within city limits, an urban population of 1,209,419 and a metropolitan population of 2,158,592.<sup>[7]</sup> The city is in the province of North Holland in the west of the country. It comprises the northern part of the Randstad, one of the larger conurbations in Europe, with a population of approximately 7 million.<sup>[8]</sup>

Its name is derived from *Amstelredamme*,<sup>[9]</sup> indicative of the city's origin: a dam in the river Amstel. Settled as a small fishing village in the late 12th century, Amsterdam became one of the most important ports in the world during the Dutch Golden Age, a result of its innovative developments in trade. During that time, the city was the leading center for finance and diamonds.<sup>[10]</sup> In the 19th and 20th centuries, the city expanded, and many new neighbourhoods and suburbs were formed. The 17th-century canals of Amsterdam (in Dutch: 'Grachtengordel'), located in the heart of Amsterdam, were added to the UNESCO World Heritage List in July 2010.

52°22′23″N 4°53′32″E﻿ / ﻿52.37306°N 4.89222°E﻿ / 52.37306; 4.89222﻿ ()

### Amsterdam

— Municipality/city —



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# More Specific in Dutch



Amsterdam

Amsterdam is the largest city and the capital of the Netherlands.



De naam van de stad is afgeleid van de ligging bij een in de 13e eeuw aangelegde dam in de Amstel. De plaats

The city is in the province of North Holland on the rivers Amstel and IJ.



Article Discussion

Read Edit View history Se

## Amsterdam

From Wikipedia, the free encyclopedia

*This article is about the Dutch capital. For other uses, see Amsterdam (disambiguation).*

**Amsterdam** (/æmstərdæm/; Dutch [ˈɑmstərˈdɑm] <sup>ⓘ</sup> <sup>ⓘ</sup>) is the largest city and the capital of the Netherlands. The current position of Amsterdam as capital city of the Kingdom of the Netherlands is governed by the constitution of 24 August 1815 and its successors.<sup>[6]</sup> Amsterdam has a population of 780,152 within city limits, an urban population of 1,209,419 and a metropolitan population of 2,158,592.<sup>[7]</sup> The city is in the province of North Holland in the west of the country. It comprises the northern part of the Randstad, one of the larger conurbations in Europe, with a population of approximately 7 million.<sup>[8]</sup>

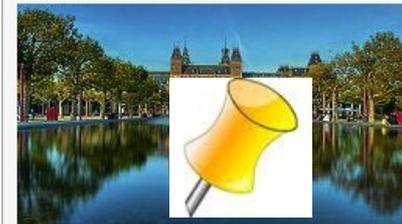
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52°22′23″N 4°53′32″E﻿ / ﻿

**Amsterdam**

— Municipality/city —



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# Appears only in Dutch



Amsterdam is the largest city and the capital of the Netherlands.



De naam van de stad is afgeleid van de ligging bij een in de 13e eeuw aangelegde dam in de Amstel. De plaats

The city is in the province of North Holland on the rivers Amstel and IJ.



Article Discussion

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**Am:** The city is also called 'Mokum' (מקום) in the local dialect.



52°22'23"N 4°53'32"E

*This article is about the Dutch capital. For other uses, see Amsterdam (disambiguation).*

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Its name is derived from *Amstelredamme*,<sup>[9]</sup> indicative of the city's origin: a dam in the river *Amstel*. Settled as a small fishing village in the late 12th century, Amsterdam became one of the most important ports in the world during the *Dutch Golden Age*, a result of its innovative developments in trade. During that time, the city was the leading center for finance and diamonds.<sup>[10]</sup> In the 19th and 20th centuries, the city expanded, and many new neighbourhoods and suburbs were formed. The 17th-century *canals of Amsterdam* (in Dutch: 'Grachtengordel'), located in the heart of Amsterdam, were added to the UNESCO World Heritage List in July 2010.



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# Appears only in English



Amsterdam is the largest city and the capital of the Netherlands.



De naam van de stad is afgeleid van de ligging bij een in de 13e eeuw aangelegde dam in de Amstel. De plaats

The city is in the province of North Holland on the rivers Amstel and IJ.



Article Discussion

Read Edit View history

Am: The city is also called 'Mokum' (מקום) in the local dialect.



52°22'23"N 4°53'32"E

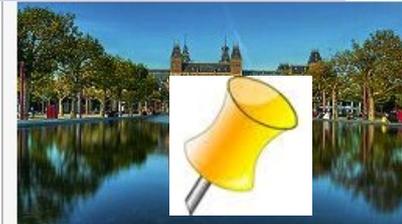
*This article is about the Dutch capital. For other uses, see Amsterdam (disambiguation).*

Amsterdam's coffee shops will not be closing their doors to tourists any time soon.



The city is in the province of North Holland in the west of the country. It comprises the northern part of the Randstad, one of the larger conurbations in Europe, with a population of approximately 7 million.<sup>[6]</sup>

Its name is derived from *Amstelredamme*,<sup>[9]</sup> indicative of the city's origin: a dam in the river *Amstel*. Settled as a small fishing village in the late 12th century, Amsterdam became one of the most important ports in the world during the *Dutch Golden Age*, a result of its innovative developments in trade. During that time, the city was the leading center for finance and diamonds.<sup>[10]</sup> In the 19th and 20th centuries, the city expanded, and many new neighbourhoods and suburbs were formed. The 17th-century *canals of Amsterdam* (in Dutch: 'Grachtengordel'), located in the heart of Amsterdam, were added to the *UNESCO World Heritage List* in July 2010.



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# Contradiction



Amsterdam is the largest city and the capital of the Netherlands.



De naam van de stad is afgeleid van de ligging bij een in de 13e eeuw aangelegde dam in de Amstel. De plaats

The city is in the province of North Holland on the rivers Amstel and IJ.



Article Discussion

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52°22'23"N 4°53'32"E

*This article is about the Dutch capital. For other uses, see Amsterdam (disambiguation).*

Amsterdam's coffee shops will not be closing their doors to tourists any time soon.



The city is in the province of North Holland in the west of the country. It comprises the northern part of the Randstad, one of the larger conurbations in Europe, with a population of approximately 7 million.<sup>[6]</sup>

**Amsterdam has a population of 780,152 within city limits**  
**On April 1<sup>st</sup> 2011 the municipality counted 783.363 residents.**





# Take Action? (Not Necessarily...)

and the capital of the Netherlands.



The Free Encyclopedia

Article Discussion

## Editing Amsterdam

From Wikipedia, the free encyclopedia

n Holland on the rivers Amstel and IJ...



→ Append

'kum' (מקום) in the local dialect.



→ Add

osing their doors to tourists any time soon.



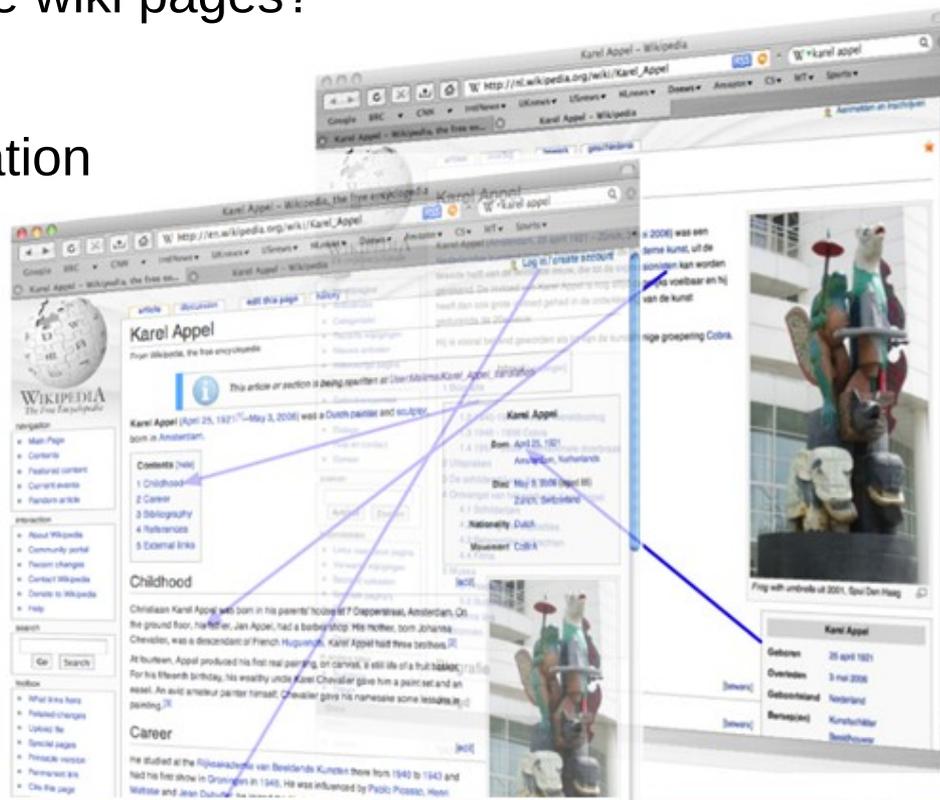
→ Replace

on of 780,152 within city limits  
ality counted 783.363 residents.

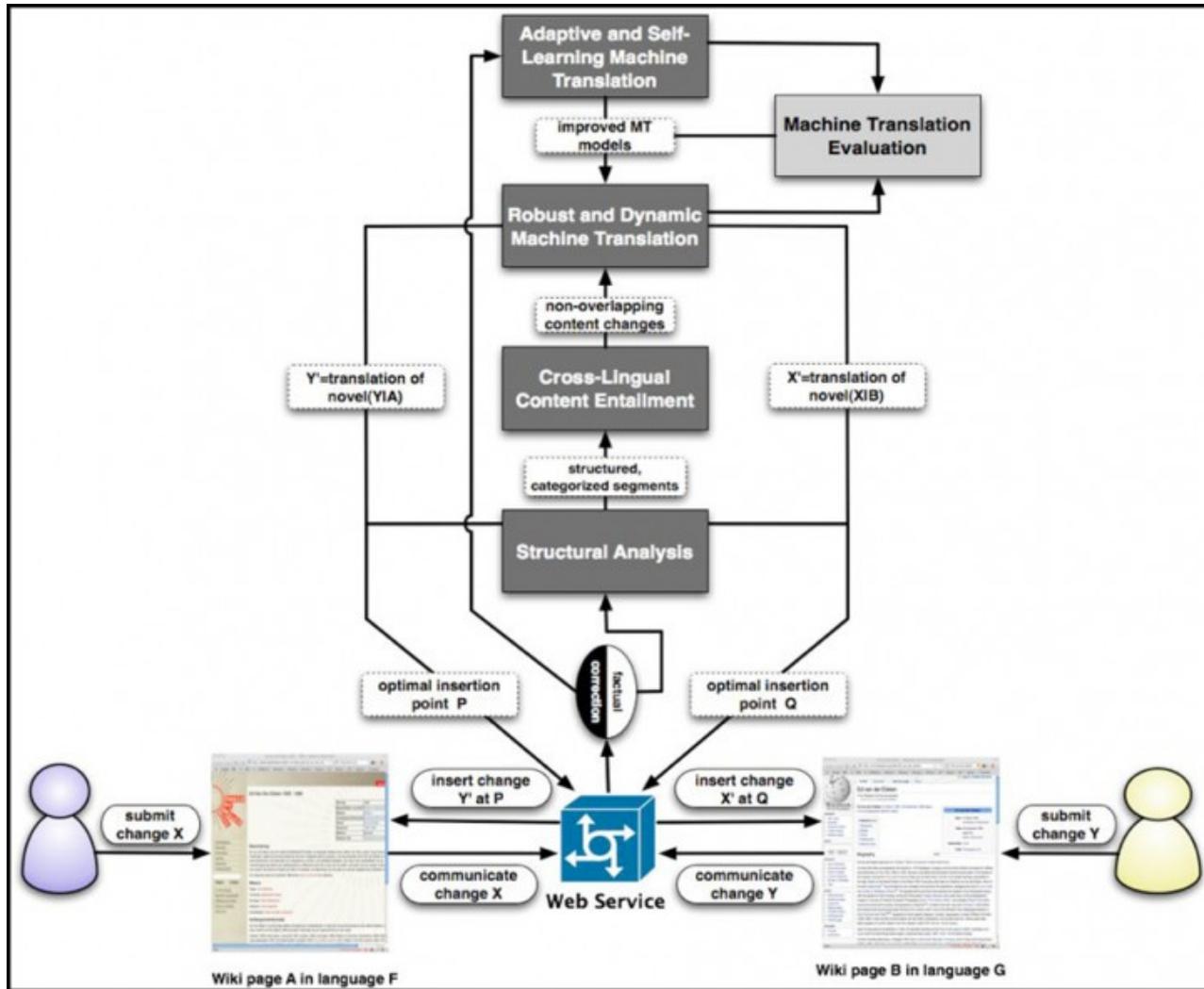


# Challenges

- ◆ **How** do we synchronize wiki pages?
- ◆ Research domains:
  - ◆ User Edits Classification
  - ◆ Structural Analysis
  - ◆ Content Entailment
  - ◆ Machine Translation



# Synchronization Process

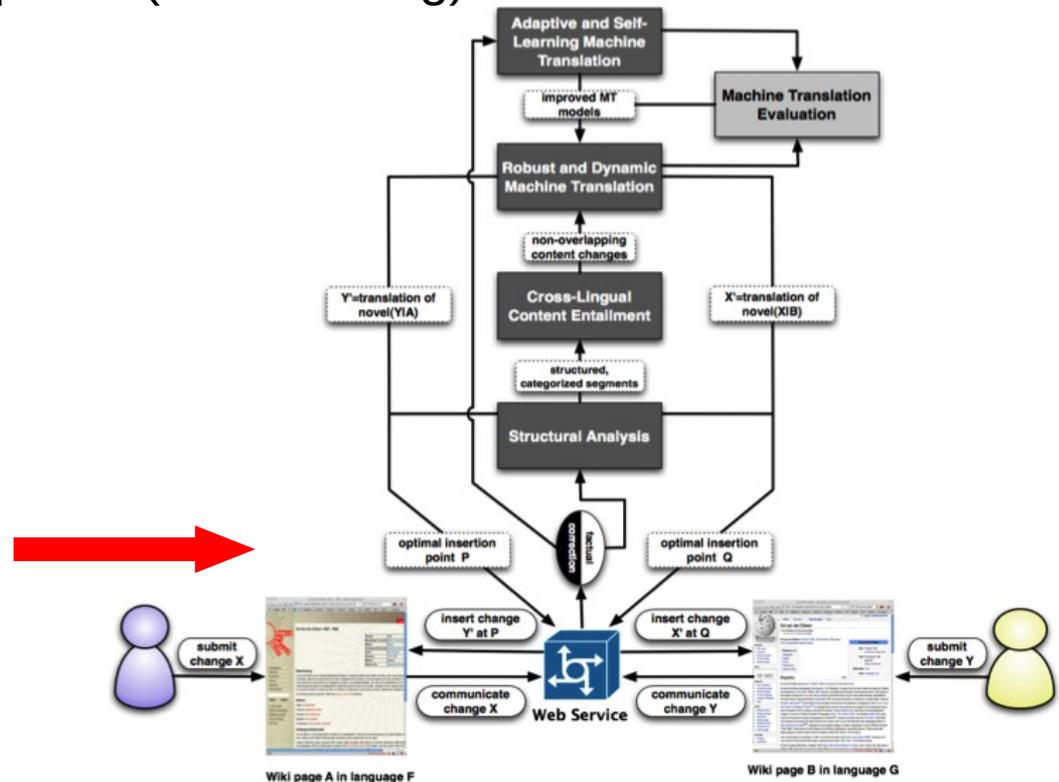


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# User Edits Classification

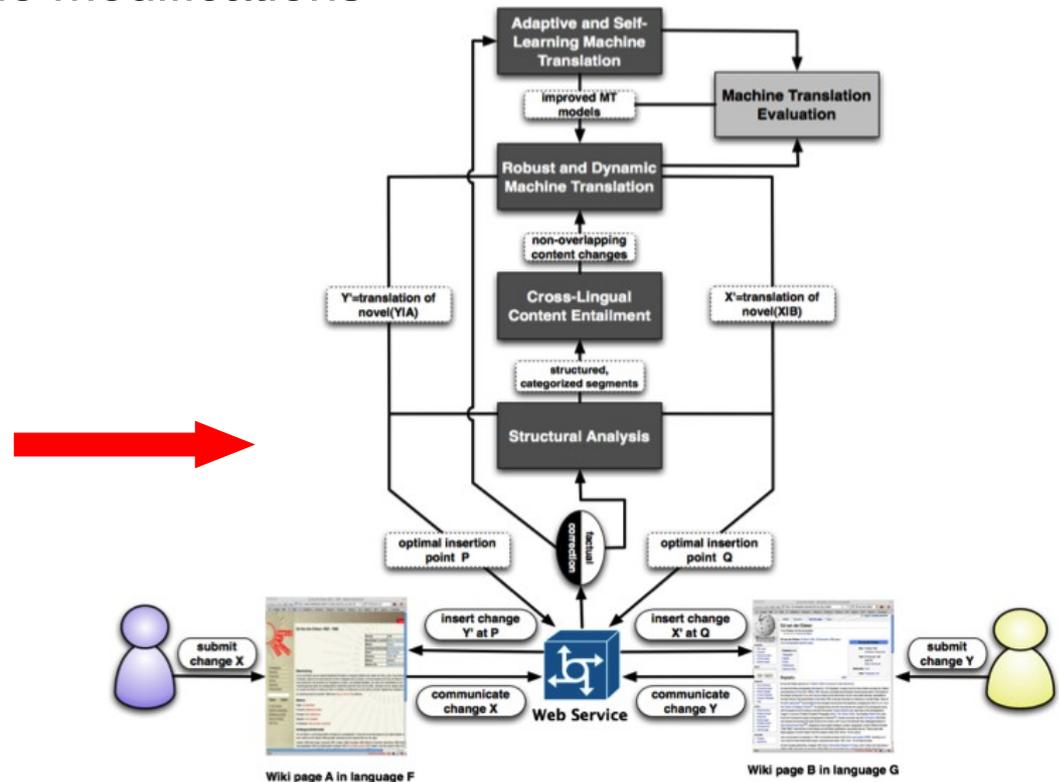
- ◆ Decides whether the meaning has changed:
  - ◆ Factual change → Synchronize
  - ◆ Fluency change → Improve (self learning)



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# Structural Analysis

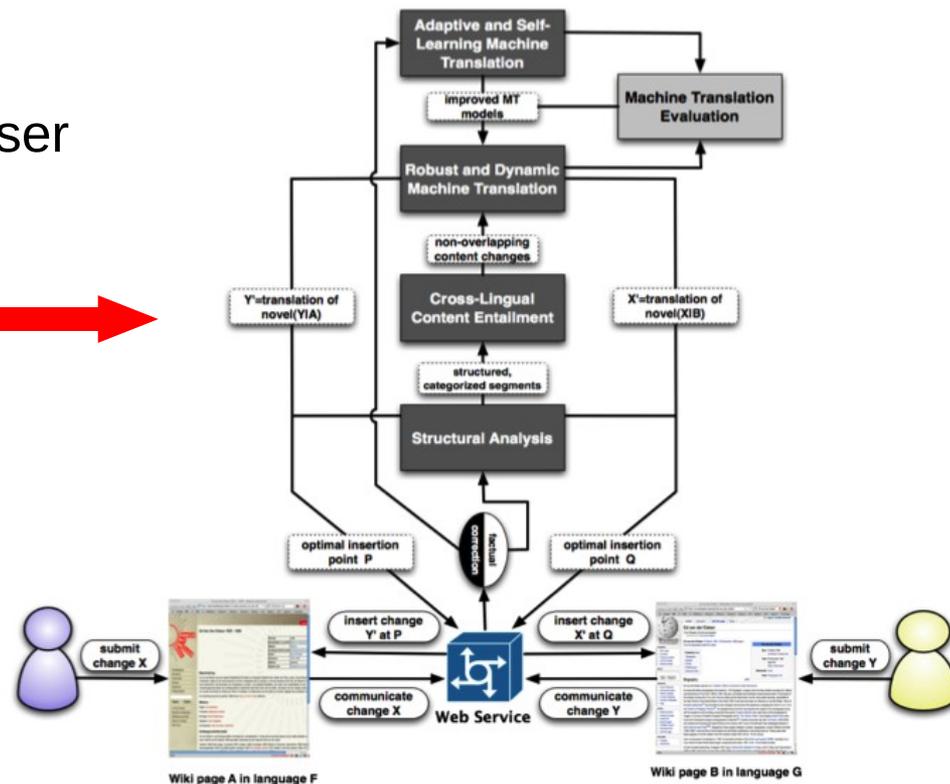
- ◆ Decides which segments to compare
- ◆ Instructs how to reconstruct the wikitext
- ◆ Decides where to insert the modifications



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# Cross-lingual Content Entailment

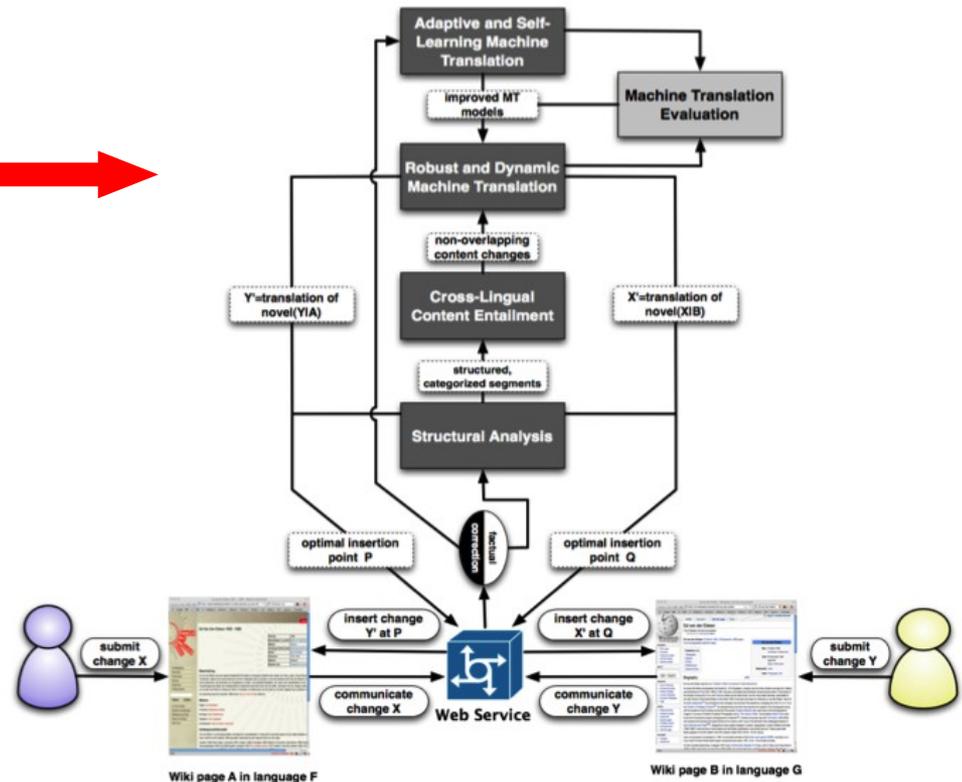
- ◆ Determines whether text segments are equivalent
  - ◆ Equivalent → No change
  - ◆ More specific → Replace
  - ◆ Unrelated → Add
  - ◆ Contradiction → Ask the user



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# Machine Translation

- ◆ Translates segments that need to be added or replaced
- ◆ Collects “fluency” corrections and learns improved models



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# Status of Development

- ◆ 3 prototypes planned
  - ◆ 1<sup>st</sup> prototype released
  - ◆ Deployed on end user's (private) wiki
- ◆ Target Languages:
  - ◆ English, German, Italian, Dutch (core)
  - ◆ Bulgarian, Turkish
- ◆ Machine Translation Quality
  - ◆ Evaluation work
  - ◆ Ongoing improvement
  - ◆ Open source & open data

# Use Cases 1 & 2



- ◆ The wiki of the Netherlands Institute for Sound & Vision

BEELD EN GELUID



- ◆ Deutsche Welle's Kalenderblatt (Today in History)

DEUTSCHE WELLE

- ◆ Demo

# 1<sup>st</sup> Prototype Demo: Kalenderblatt on MediaWiki



**KalenderBlatt**

(Weitergeleitet von [Hauptseite](#))

[KalenderBlatt](#) - [Deutsche Welle](#)

Januar							Februar							März		
M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W
					1	2	1	2	3	4	5	6	1	2		
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23
24	25	26	27	28	29	30	28							28	29	30
31																

Mai							Juni							Juli		
M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W
					1		1	2	3	4	5					
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20
23	24	25	26	27	28	29	27	28	29	30				25	26	27
30	31															

**1. Januar**

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**Themen**

- 1.1.1863: USA schaffen Sklaverei ab
- 1.1.1802: Berliner Schauspielhaus eröffnet
- 1.1.1801: Entdeckung des Ceres

---

**Gedenktage**

- 1.1.2002: Neue Währung für Europa
- 1.1.1993: Europäischer Binnenmarkt
- 1.1.1967: "Kommune 1"
- 1.1.1959: Fidel Castro in Havanna
- 1.1.1957: Saarland 10. Bundesland der Bundesrepublik
- 1.1.1901: Australien
- 1.1.1900: "BGB" in Kraft
- 1.1.1896: Grundstein des Jugendstils
- 1.1.1801: Union mit Irland

---

**Geburtstage**

- 1.1.1939: Michèle Mercier
- 1.1.1920: Anna Langfus (†12.5.1966)
- 1.1.1919: Jerome David Salinger (†27.1.2010)

In anderen Sprachen



## 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)

Bartolomé Esteban Murillo g war ein spanischer Maler des Barock.

Bartolomé Esteban Murillo wurde in Sevilla geboren.

### CoSyne

- Step by Step
- Sync > English
- Sync Report

### Suche

Seite Suchen

### Navigation

- Hauptseite
- Gemeinschafts-Portal
- Aktuelle Ereignisse
- Letzte Änderungen
- Zufällige Seite
- Hilfe

### Werkzeuge

- Links auf diese Seite
- Änderungen an verlinkten Seiten
- Datei hochladen
- Spezialseiten
- Druckversion

**The user (DW) edits German content for Kalenderblatt**  
**There is no English page**  
**New entry: Bartolomé Esteban Murillo, a Spanish painter**  
**Born 1.1.1618, Died 3.4.1682**

# Welcome to CoSyne

## Content Synchronization with Wikis



This is a prototype version. It is still under development.

You will be redirected to the modified page in a few seconds.

Executing analysis .. in\_process

**The user triggers CoSyne**



Seite Diskussion Bearbeiten Versionen/Autoren Löschen Verschieben Schützen nicht mehr beobachten

## 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)

Bartolomé Esteban Murillo [g](#) war ein spanischer Maler des Barock.

Bartolomé Esteban Murillo wurde in Sevilla geboren.

In anderen Sprachen

- [English](#)

CoSyne

- [Step by Step](#)
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Suche

Navigation

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- [Gemeinschafts-Portal](#)
- [Aktuelle Ereignisse](#)
- [Letzte Änderungen](#)
- [Zufällige Seite](#)
- [Hilfe](#)

Werkzeuge

- [Links auf diese Seite](#)
- [Änderungen an verlinkten Seiten](#)

**CoSyne creates a new English page and adds language links between the German & English versions**



page discussion edit history delete more protect watch

## 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)



This page has been edited by CoSyne. It contains *machine generated content*. It requires copy editing for grammar, style, cohesion, tone and/or spelling. You can assist by [editing it](#).

[bartolomé Esteban Murillo](#) was a Spanish painter of the baroque.

[bartolomé Esteban Múrillo](#) was born in Seville.

Category: CoSyne generated content

in other languages

- Deutsch

cosyne

- Step by Step
- Sync > German
- Sync Report

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toolbox

- What links here
- Related changes
- Upload file
- Special pages

**CoSyne provides German translation to English and reconstruction of Wikitext formats (hyperlinks, headings, bold/italic, images, templates, ...)**



## 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)



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bartolomé Esteban Murillo was a Spanish painter of the baroque.

bartolomé Esteban Murillo was born in Seville.

Category: CoSyne generated content

### in other languages

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### cosyne

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**CoSyne adds a warning message about machine generated content and asks users to review & correct the content**

1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)

Bartolomé Esteban Murillo war ein spanischer Maler des Barock.

Bartolomé Esteban Murillo wurde in Sevilla als jüngster Sohn in einer Familie von 14 Kindern geboren.

Der gläubige Maler schuf vor allem Porträts und Gemälde mit stark religiösen Motiven.

**The German version is now linked to an English version  
The user provides additional information to the German version  
adding a new sentence & changing an existing sentence**

# Welcome to CoSyne

## Content Synchronization with Wikis



This is a prototype version. It is still under development.

You will be redirected to the modified page in a few seconds.

Executing analysis .. in\_process

**The user triggers CoSyne**



## 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)



This page has been edited by CoSyne. It contains *machine generated content*. It requires copy editing for grammar, style, cohesion, tone and/or spelling. You can assist by editing it. [diff]

[Bartolomé Esteban Murillo](#) was a Spanish Baroque painter.

[bartolomé Esteban Murillo](#) was in Seville as recent son in a family of 14 children born.

The believers painters created especially portraits and paintings with strong religious motives.

Category: CoSyne generated content

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**CoSyne creates a new version of the English page**



# 1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)

(Difference between revisions)

Revision as of 21:39, 30 May 2011 (edit)

Cosynadmin (Talk | contribs | block)

← Older edit

Latest revision as of 21:46, 30 May 2011 (edit) (undo)

Cosynadmin (Talk | contribs | block) [rollback]

(One intermediate revision not shown)

Line 1:

[http://de.wikipedia.org/wiki/Bartolome\_Esteban\_Murillo Bartolomé Esteban Murillo] was a Spanish Baroque painter.

- Bartolomé Esteban Murillo was born in Seville.

[[de:1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)|]]

Line 1:

+ {{cosyne generated content

+ |revid=634}}

[http://de.wikipedia.org/wiki/Bartolome\_Esteban\_Murillo Bartolomé Esteban Murillo] was a Spanish Baroque painter.

+ bartolomé Esteban Murillo was in Seville as recent son in a family of 14 children born.

+ The believers painters created especially portraits and paintings with strong religious motives.

[[de:1.1.1618: Bartolomé Esteban Murillo (†3.4.1682)|]]

Latest revision as of 21:46, 30 May 2011



This page has been edited by CoSyne. It contains *machine generated content*. It requires copy editing for grammar, style, cohesion, tone and/or spelling. You can assist by [editing it](#). [diff]

in other languages

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cosyne

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**CoSyne does not change the 1<sup>st</sup> sentence, it replaces the 2<sup>nd</sup> by a translation of the modified German & it adds a translation of the new German sentence**



# Use Case 3

- ◆ Wikimedia Netherlands
  - ◆ Options:
    - ◆ MediaWiki manuals
    - ◆ Copyright lobby texts (?)
    - ◆ Specific domains (technical, soccer, ...)
  - ◆ Languages:
    - ◆ EN, DE, IT, NL
  - ◆ CoSyne users mailing list



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