

# Modelling Sustainable Systems and Semantic Web

## Cooperative Action in Digital Change

Lecture in the Module 10-202-2309  
for Master Computer Science

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July 2021

# Network Cooperation. The History of the .NET Project

## **Microsoft on the Way to Modes of Network Cooperation – the .NET Project**

### **What is .NET**

”... completely redefining the way Microsoft will do business in the future ... and how software should be developed.” (Westphal, 2002)

- ▶ The platform should replace the previous art of Windows programming, flexibly access operating system and basic functions and support exchanges between programs.
- ▶ Designed for use on different hardware platforms down to cell phones and PDAs. The Java idea without restriction to Java as programming language.

# The History of the .NET Project

## Prehistory:

Legal dispute between Sun and Microsoft over Java

- ▶ Microsoft is expanding Java according to its own ideas and needs and thus endangers Java compatibility
- ▶ Microsoft implementations J++ and J#

Further problems:

- ▶ Also those languages as Visual Basic, C++, and J++ mostly used for Windows programming languages were not binary compatible.
- ▶ Even string data types weren't binary compatible – .NET is consistently Unicode based.
- ▶ No uniform model of memory management.

# The History of the .NET Project

- ▶ 1996: first work on .NET
- ▶ 2000: .NET Framework 1.0 Beta
- ▶ October 2000 – C# and the CLI are submitted by MS, HP and Intel for standardisation to the ECMA
  - ▶ ECMA – European Computer Manufacturers Association
  - ▶ December 2001 – First standard passed to ISO
  - ▶ April 2003 – Adoption of the ISO standards ISO/IEC 23270 (C#) and ISO/IEC 23271 (CLI).
- ▶ April 2003 – Delivery of .NET Framework 1.1 together with Windows Server 2003, which provides an integrated .NET runtime environment.
  - ▶ Thus transition to the new platform at the conceptual level of Corporate Servers. However, integration into the whole product family is not advancing as quickly as expected.
- ▶ End of 2006: .NET 3.0, later an integral part of Windows Vista and Windows Server 2008, with profound, also conceptual extensions of the architecture.

# The History of the .NET Project

- ▶ End of 2007: Visual Studio 2008 and .NET Framework 3.5
  - ▶ Framework Class Library (FCL) – comparable to the Java Base Classes that are shipped with any Java distribution – includes almost 12 000 classes in 300 namespaces.
  - ▶ Partial release of the source code of the Base Class Library under the restrictive Microsoft Reference Source License.
- ▶ April 2014: Microsoft announces the creation of an independent .NET Foundation at – <http://www.dotnetfoundation.org>
  - ▶ January 2015: Announcement of the .NET Open Source Initiative.
  - ▶ Stronger separation between .NET Framework and .NET Core. .NET Core contains the base classes and the runtime environment. Their further development will be transferred to the .NET Foundation.

## .NET Project and Open Source

ECMA standardization also allows implementation of the standard on other platforms.

Versions beyond Windows:

- ▶ Microsoft itself with the Shared Source CLI released in 2002 versions for Mac OS and FreeBSD. These activities were later abandoned.
- ▶ Various activities of the Linux community to implement the concepts and create a free .NET version.
  - ▶ In 2009 the dotGNU project starts to implement a runtime environment for Portable.NET. Developed upto a release version 0.1 and discontinued at the end of 2012: "As of December 2012, the DotGNU project has been decommissioned, until and unless a substantial new volunteer effort arises."
- ▶ Much behind the capabilities of the Windows versions.
- ▶ The only powerful "free" project is the Mono Project  
<http://www.mono-project.com/>

# The History of the Mono Project

- ▶ In 1999, Miguel de Icaza and Nat Friedman founded the company *Helix Code*. The company was renamed to *Ximian* in 2001.
- ▶ Business model: Solutions and services, based on a mix of free and commercial software.
- ▶ Involved in the creation of the Linux Gnome project.
- ▶ 2002 start of the Mono project.
- ▶ Company was acquired by *Novell* in 2003, which continues to strengthen its Linux portfolio.
- ▶ In 2011, Novell was acquired by the *Attachmate Group* who has no interest in the continuation of the Mono project.
  - ▶ After several months of discussions, the US Department of Justice (DOJ) and the German Federal Competition Office (FCO) have allowed a consortium of Microsoft, Oracle, Apple and EMC to acquire 882 patents from Novell only subject to conditions clearly intended to prevent their use against free software players. (FSFE Newsletter, April 2011)

# The History of the Mono Project

- ▶ In 2011, Icaza and Friedman founded *Xamarin* <http://xamarin.com> and there bundle the further development on the Mono Project.
  - ▶ The company's focus is on mobile applications.
- ▶ The mono core, the runtime environment, is freely available under the LGPL v.2, but Xamarin also offers commercial licenses for the Mono platform.
  - ▶ If you are planning to use Mono as a bundled part of your commercial product, on embedded hardware, or in any other situation where using the LGPL-licensed Mono is impossible or problematic, Xamarin can sell you a commercially-friendly license that will suit your needs.
  - ▶ Many commercial users of Mono acquire a commercial license when they want the flexibility and peace of mind to use Mono without worrying about the terms of the LGPL.
- ▶ New stage of cooperation: at the end of 2013, Microsoft, Xamarin and others create the *.NET Foundation*.



# .NET Open Sourcing

- ▶ In 2008 Microsoft published the source code of the framework under the restrictive Microsoft Reference License.
- ▶ At the end of 2013, Microsoft, Xamarin and others founded the *.NET Foundation* as the new rights holder and licensor of .NET Frameworks. <http://www.dotnetfoundation.org/>
  - ▶ In 2007 Microsoft still claimed that the Mono project violated Microsoft's IP rights.
- ▶ At the end of 2014, a subset of the Reference Source source code is made available on GitHub and published under the MIT license.
  - ▶ <https://github.com/dotnet>
  - ▶ This was done to fill gaps between Mono and .NET using the same code.

# .NET Open Sourcing

- ▶ At the same time, Microsoft has started also to publish the revised components of the framework under the name *.NET Core* on GitHub under the MIT license.
- ▶ Basis for the upcoming, modular *.NET Framework 5*.
  - ▶ .NET Core has been transferred from Microsoft to the .NET Foundation been.
- ▶ Using the MIT license, there are in fact no more restrictions how to use the source code of .NET Core.
  - ▶ With the establishment of the .NET Foundation and the transfer of rights and source codes to the Foundation, Microsoft works actively with Xamarin, to provide .NET on different platforms. By disclosing the source code under the MIT license or Apache 2.0 license the source code of the .NET Framework can be used almost arbitrarily – even in closed source projects. Licensing and patent law disputes are therefore hardly possible any more and no longer to be feared. (Wikipedia)

# Conditions of Cooperative Action

Which *legal requirements* for the civil society are constitutive for cooperative contexts?

- ▶ *Freedom of contract* as the right to establish contexts of cooperative agreements.
- ▶ The *right to free speech* (as an internal right) precedes the freedom of contract.
  - ▶ This right has nothing directly to do with the concept of democracy.
- ▶ Both presuppose the (mental and social) *ability to close contracts* and thus a society of owners. (Legal capacity – Geschäftsfähigkeit)
- ▶ *Prohibited direct intervention from outside* on the inside of cooperative contexts as *social normative*.
  - ▶ Such a right on the *private level* is part of the personality rights (Persönlichkeitsrecht – right to privacy as a personality right in the Constitution) and a cultural achievement of the civil society.

# Conditions of Cooperative Action

Results of dynamics in the internal relationship are as topoi visible from the outside.

- ▶ Example of corporate identity.
- ▶ Consequence of the prohibition of intervention.

Inside is outside in relation to almost everyone else.

- ▶ Foreign topoi appear as conditions of action, whose *dynamics* are only accessible to the extent that this process can be internalized via a translation (justified expectations).

# Cooperation and Competition

Cooperation and competition (Kooperation und Konkurrenz) are available as forms of structuring of society on the same logical level.

- ▶ Only *parts* of bundle of interests are used in cooperative ties, other interests remain *competitive* (concurrent).
- ▶ *Concurrent* means more concurrency than opposition, clash.
- ▶ System theory: positive and negative feedback.
- ▶ Debate about (German) Kooperation,  
<http://www.frei-gesellschaft.de/wiki/Kooperation>

„The area of tension between cooperation and competition is the tension between the possibility of cooperation and the possibility of demarcation and thus the field of tension between two pillars of the civil legal system – Freedom and Property“. (E. Moglen)

# Cooperation and Competition

Cooperation and competition thus appear as two poles a continuum of possible forms.

- ▶ **Cooperation:** narrow interests, high depth of justification, coupling already in the *planning phase* of the action.
- ▶ **Competition:** broad range of interests, low depth of justification, coupling only occurs in the course of *action execution*.

The balance of the weights between the two poles are constantly changing. Regional regulatory and legal areas (e.g. states) are competing social practices where these weights are differently balanced.

- ▶ (inner) bourgeois "cultures".

In this understanding, **Open Culture** is a *specific bourgeois cultural practice* in which cooperative moments are valued higher than in currently common (e.g. neoliberal) practices.