Services & Workflows
SOAP, REST and all you need?

- What to expect
  - Building services with WCF
  - Building workflows with WF
  - Exposing WF workflows with WF
  - Doing both, SOAP and REST style communications
  - Sample code

- What NOT to expect
  - Introduction to .NET Framework 3.0, 3.5
  - Discussion about ‚SOA‘
  - Discussion about ‘Why REST?’, ‘Why not WS-*?’
  - Deep architectural musings, today

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In-depth support and consulting for
software architects and developers

Services & Workflows

SOAP, REST and all you need?

with WCF and WF

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As time goes by…

2006

Yeah,
That was a great event!

© 2002 FIFA TM

FIFA WORLD CUP

GERMANY

2006

BIG Party.

Fun everywhere.

Gorgeous football

… and not ‘soccer’!

“Die Welt zu Gast
bei Freunden.”

Group A

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Germany	1	1	0	0	4	2	3
Ecuador	1	1	0	0	2	0	3
Costa Rica	1	0	0	1	2	4	0
Poland	1	0	0	1	0	2	0

Group B

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
England	1	1	0	0	1	0	3
Sweden	1	0	1	0	0	0	1
Trinidad and Tobago	1	0	1	0	0	0	1
Paraguay	1	0	0	1	0	1	0

Group C

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Argentina	1	1	0	0	2	1	3
Netherlands	1	1	0	0	1	0	3
Côte d'Ivoire	1	0	0	1	1	2	0
Serbia and Montenegro	1	0	0	1	0	1	0

Group D

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Mexico	1	1	0	0	3	1	3
Portugal	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0
Iran	1	0	0	1	1	3	0

Group E

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Italy	0	0	0	0	0	0	0
Ghana	0	0	0	0	0	0	0
USA	0	0	0	0	0	0	0
Czech Republic	0	0	0	0	0	0	0

Group F

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Brazil	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	0
Australia	0	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0

Group G

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
France	0	0	0	0	0	0	0
Switzerland	0	0	0	0	0	0	0
Korea Republic	0	0	0	0	0	0	0
Togo	0	0	0	0	0	0	0

Group H

Overview | News Key

Team	MP	W	D	L	GF	GA	Pts
Spain	0	0	0	0	0	0	0
Ukraine	0	0	0	0	0	0	0
Tunisia	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0

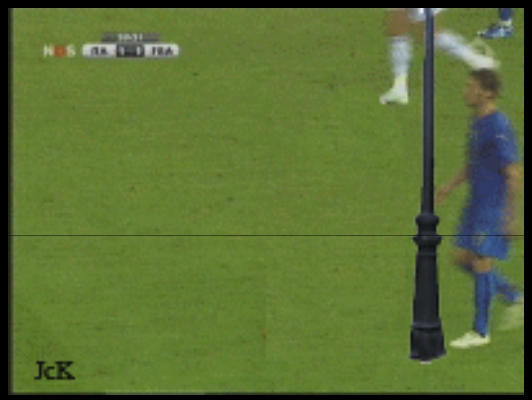
Entertainment
at its best – literally.

NED
BRA

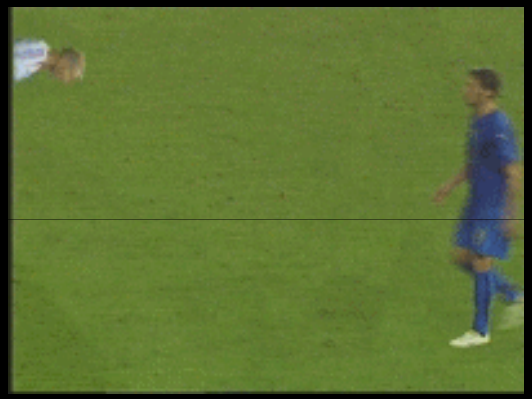
BTW…
this was the
version we know -
as Germans and Brits.

There seem to be
different points of view, though.

The **FRENCH**:

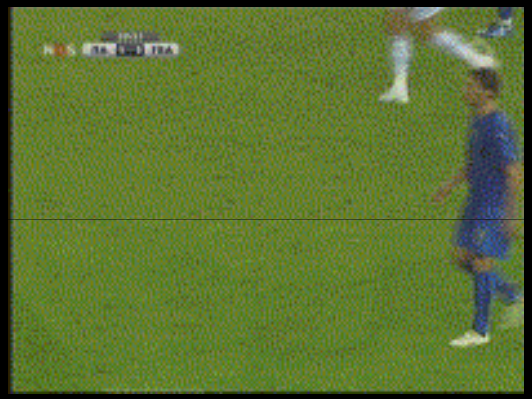

JcK

The **ITALIAN**:



And, of course…

The **US AMERICAN**:



As time goes by…

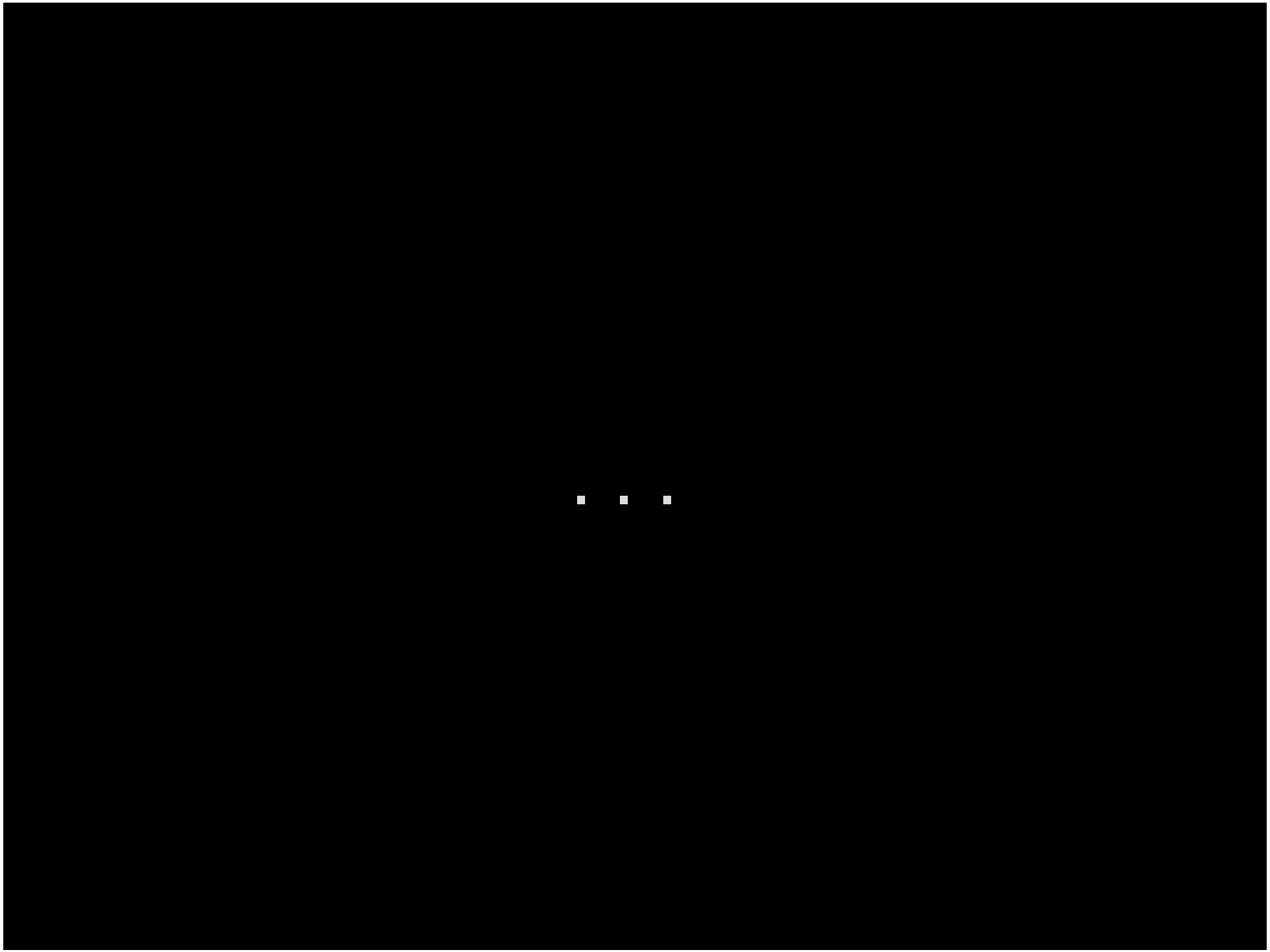
2008

Another **BIG** event!

REALLY looking forward!

Everybody!

Everybody ???



Croatia end woeful England's Euro 2008 dream

By Henry Winter
Last Updated: 11:28am GMT 22/11/2007

Have your say | Read comments

England (0) 2 Croatia (2) 3

Outclassed, outfought and outthought, England are out of Euro 2008 and Steve McClaren will surely be out of work after the FA board meet this morning, deservedly so. Russia qualify behind the outstanding Croatians and England have only themselves, and their hapless manager, to blame.

- **FA sack Steve McClaren after England exit**
- **England v Croatia: How the players rated**
- **What is wrong with British football?**
- **Next England manager: The contenders**

At breakfast, McClaren will become toast.

No one will mourn his departure. Forget the 25 million people losing their identities in the post; a whole nation lost its identity at a drenched Wembley.

The enduring symbol of a night of a thousand tears was of McClaren standing helpless in the dug-out, shielding himself from the rain with an umbrella, knowing that nothing would protect him from the downpour of rancour that descended on him at the end, the fall of the final curtain.

Shattered: Steven Gerrard sits stunned as Croatian match-winner Mladen Petric (l) celebrates victory

It was merciless, the fans' rage spilling over and pouring down from the terraces, waves of

TABLES | RESULTS | FIXTURES

Barclays Premier League

10/03/2008 16:06

	Team	P	Pts
1	Arsenal	29	66
2	Man Utd	28	64
3	Chelsea	27	58
4	Liverpool	29	56
5	Everton	29	56
6	Aston Villa	28	48
7	Blackburn	29	46
8	Man City	29	45
9	Portsmouth	28	44
10	West Ham	29	40
11	Tottenham	28	35

↑ UP | DOWN ↓

FOOTBALL TOP FIVE

- Tom Hicks terminates Liverpool talks with DIC
- Liverpool can make Champions League quartet
- Don Howe: Liverpool must attack Inter
- Avram Grants faces summer Chelsea exit
- Wembley FA Cup semi-finals' magnetic

Christian Weyer and thinktecture

- Support and consulting services for software developers and architects on the .NET platform
- Renowned experts in today's technologies
- We track future technologies and work closely with Microsoft

- My area of expertise are distributed applications, Windows Communication Foundation, Windows Workflow Foundation, Web Services, Web Services interoperability and all things service orientation

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DILBERT®

BY SCOTT ADAMS

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Agenda

- *From the Outside:*
  Services & Service-Orientation
- *From the Inside:*
  Workflows
- *War of Ideologies?*
  'SOAP' & 'REST'
- *A REST Sample:*
  ADO.NET Data Services Framework

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Service-Orientation

- It is not something completely new
- It is not ‚SOA' per se
- It is not a silver bullet

- It is a way of thinking
- It is a way of modeling your business problems
- It is a way of modeling and implementing software

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Windows Communication Foundation - WCF

- WCF is the platform for communicating between software „pieces“ (in managed code)
  - At least in theory…
- Service-oriented communication principle
  - Originally; SOAP-based
- Sending and receiving messages
- Communication endpoints consist of
  - Address
  - Binding
  - Contract
- Not just „Web Services++“ …

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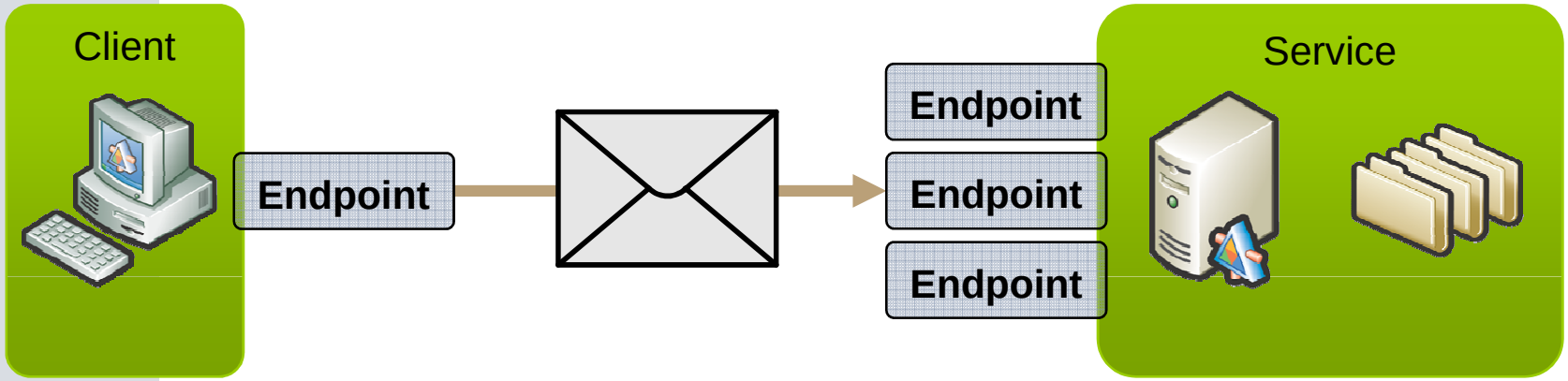
Windows Communication Foundation

Bird's Eye View



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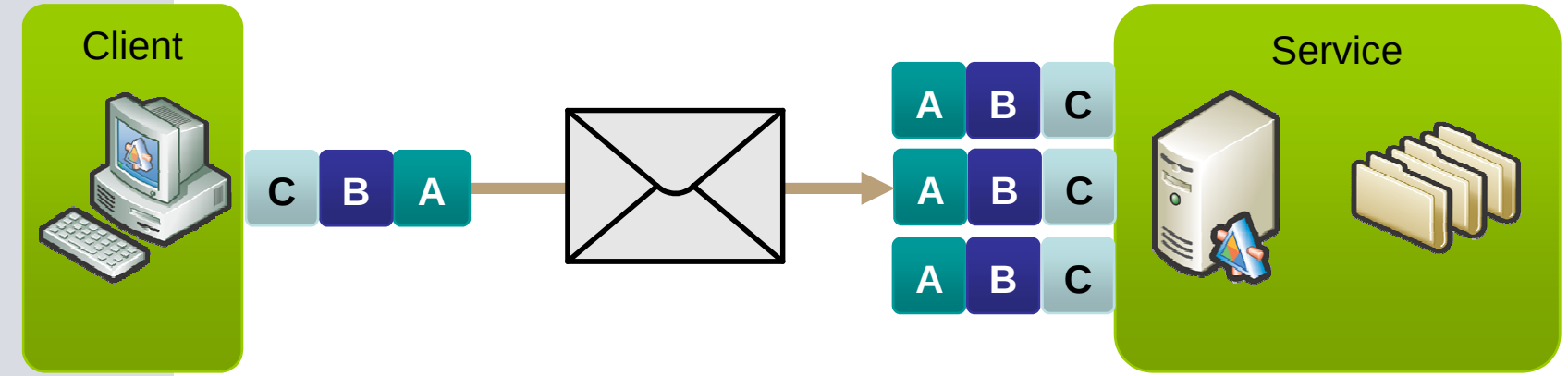
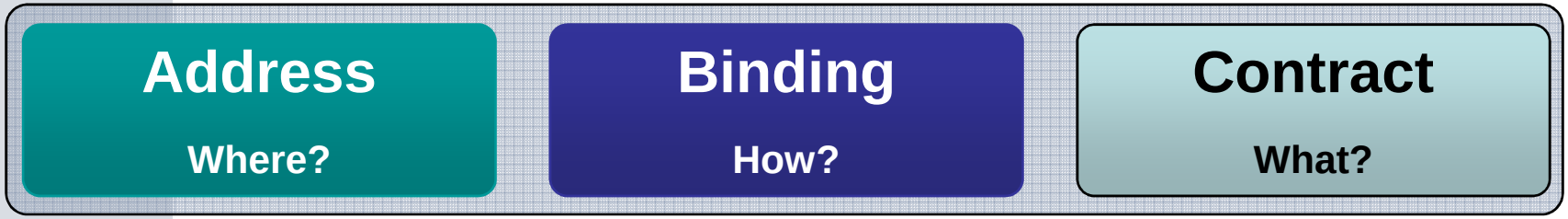
WCF: Address, Binding, Contract





Endpoint

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Workflows

- ‚Workflow‘ heavily depends on your personal definition
- Typical needs & facts
  - Long running processes
  - Composite model
  - Declarative model
  - Persistable, trackable
  - Updateable
- Microsoft wanted a generic framework for building workflow-enabled solutions

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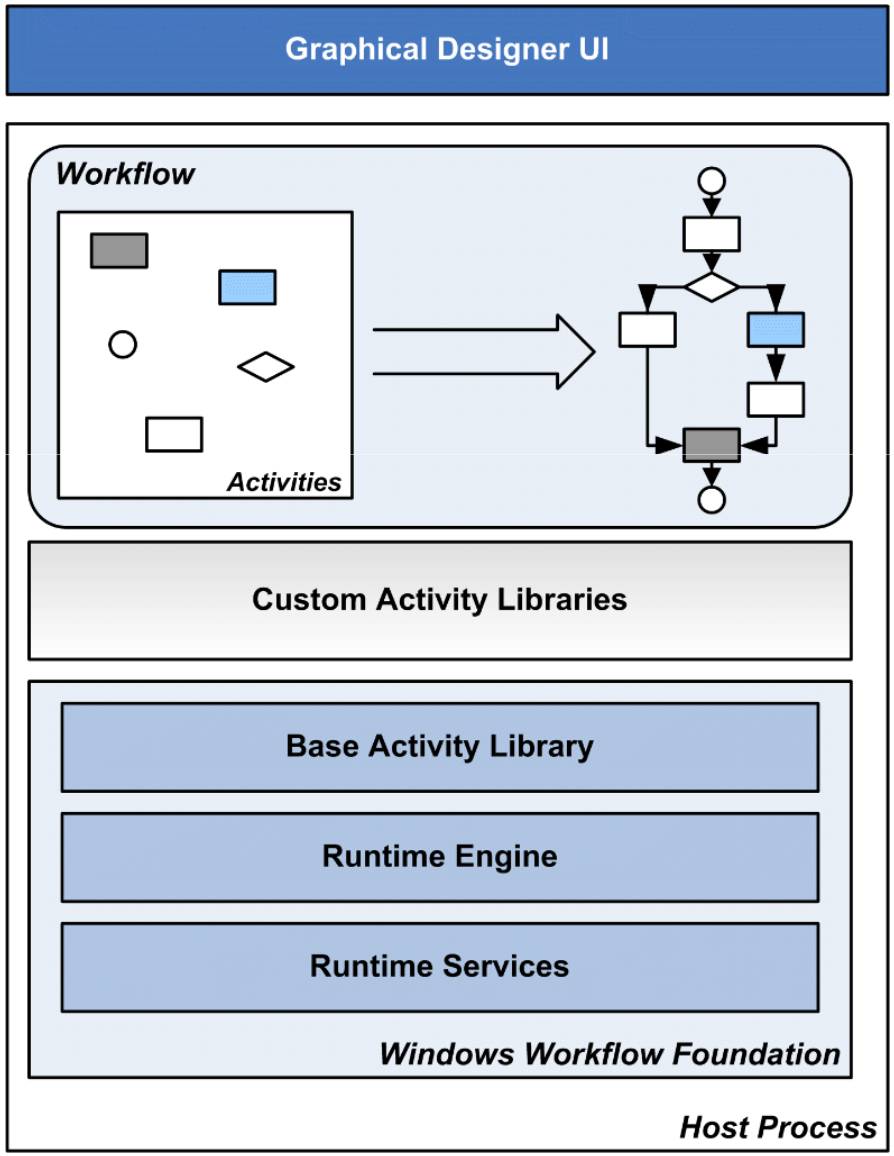
Windows Workflow Foundation



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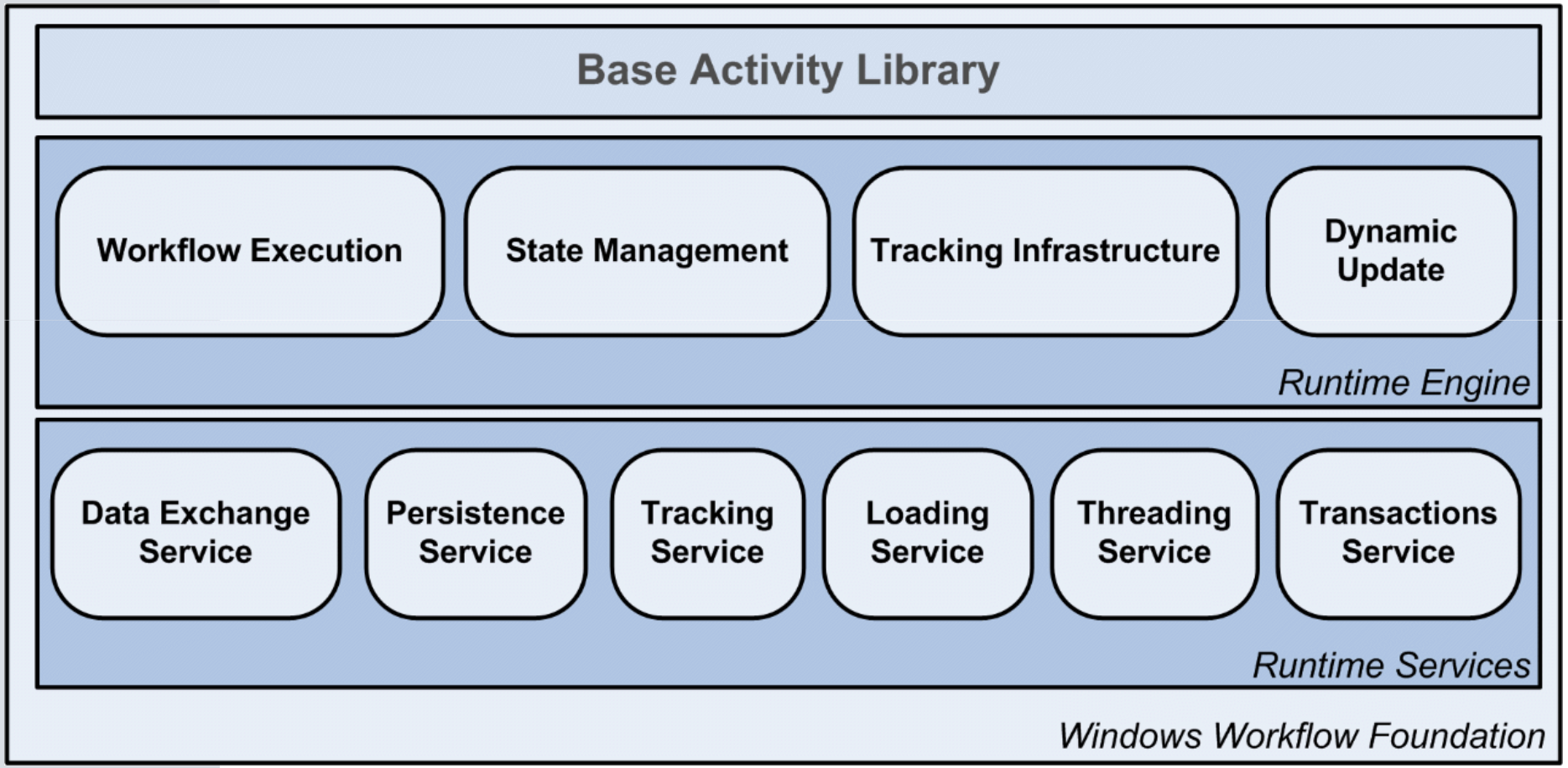
WF Runtime



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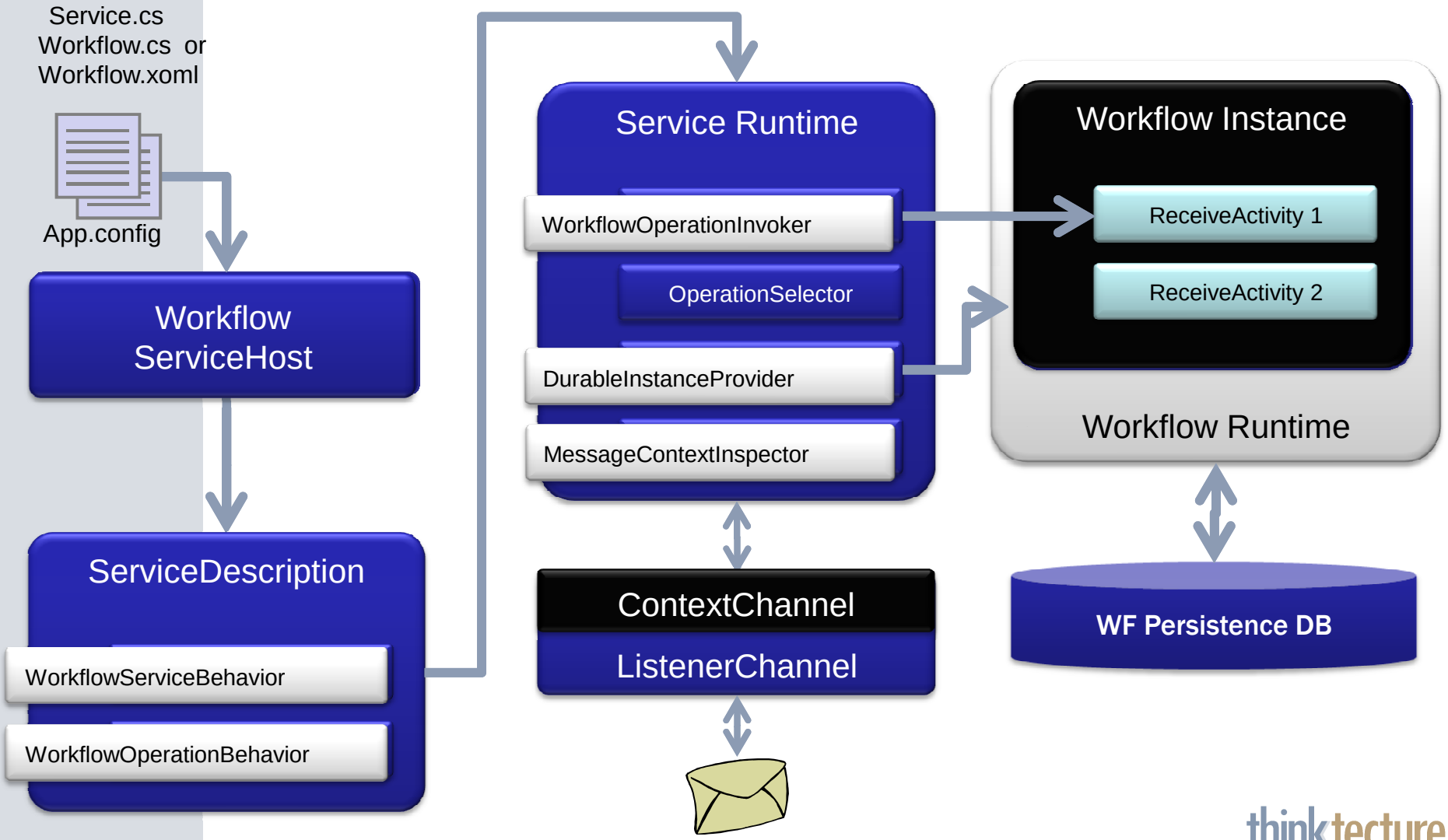
Workflow Services



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„Services“: Two Views

- SOAP (aka WS-*) and REST
  - Different cultures and mindsets
  - "Data vs. Behavior“, kindof
- SOAP-ish
  - Verb-oriented
  - SOAP services are composable in time (to form process)
- REST-ish
  - Noun-oriented
  - REST resources are composable in namespace (to form content)

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The Ongoing Debate: REST vs. WS-*

- What is REST? In one sentence?

> "With REST, every piece of information has its own URL."
>
> David Meggison, REST: the quick pitch
> Inventor of SAX

REST-ful Web Services

- What is REST?
  - Representational State Transfer
  - “Resource Oriented Architecture” – argh! ☺
  - An architectural style
  - REST is not a set of laws or even a specification - it’s a style
- Usually implemented with HTTP
  - Addresses (URLs)
  - Methods (GET/POST/PUT/DELETE)
  - Transport vs. application protocol

How To REST

- REST recipe
  - Find all the nouns
  - Define the formats and content types
  - Pick the operations
  - Highlight exceptional status codes

REST-HTTP with WCF

- New in .NET 3.5
  - [WebGet]
  - [WebInvoke]
  - WebHttpBinding
  - WebHttpBehavior
  - WebScriptEnablingBehavior
- Self-hosted or in IIS/WAS
- Gotchas
  - No caching
  - No full content type support

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Feed Syndication & Consumption

- HTTP model, uses pull-based feeds
- Many feed clients / aggregators
- Atom and RSS are supported standards
- Great way for services to publish information
  - Not just for news
  - Think relevant system data or business metrics
- Consumption with SyndicationFeed.Load
- Or use IE7 API
  - More mature and feature rich

ADO.NET Data Services Framework

- Built on top of WCF V3.5
- Access to data over a REST-bful interface
  - Returns XML (APP) or JSON
- Built-in URI-based query syntax
  - Selection, filtering, paging, sorting
- Client-side libraries for .NET and AJAX clients
  - Also for Silverlight
- Part of ASP.NET Futures package

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Summary

- WCF – it is the *C* that matters
  - Able to build all kinds of communication approaches, patterns
  - Are abstractions really always wanted?
- WF – combined with WCF
- For me, there is just a ‚REST *AND* SOAP‘
- Go build connected systems with .NET 3.5

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Resources

- Email Christian Weyer
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- Weblog Christian Weyer
  - http://blogs.thinktecture.com/cweyer
- thinktecture
  - http://www.thinktecture.com

See you! ☺

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