

Windows Azure

A Strategy Update

Andreas Ebert

Regional Technology Officer, EU

Microsoft

ETSI – Workshop

Grid, Clouds & Service Infrastructures

Sophia-Antipolis, December 3rd, 2009

Agenda

- Context
- Azure - A Cloud Delivery Framework
- Cloud Application Interoperability
- Access Control Interoperability
- Data Portability
- Data Access
- Application Portability

Cloud: View from a Platform Company

● Basis

- Business Platform
- Technology Platform
- Interoperability
- 3 Screens & Cloud(s)
- IaaS, **PaaS**, SaaS, **DaaS**

● Goal

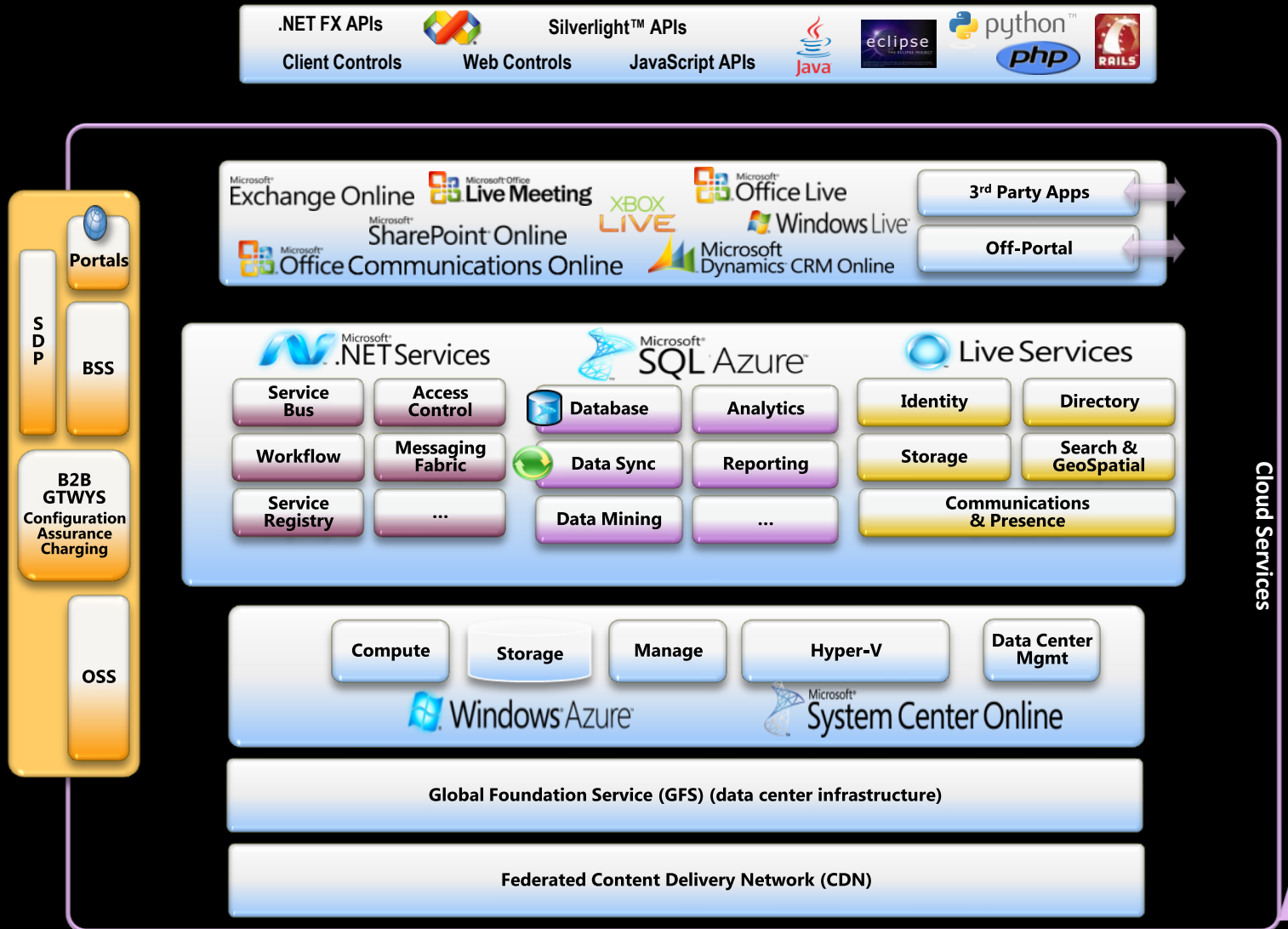
- Transformation **with** ecosystem
- 1 mio Partners
- 1,5 mio Devices
- Developers, Developers, Developers

Windows Azure in one Slide (1)

- Windows Azure
- SQL Azure
- Windows Azure platform AppFabric

- Developer tools
- Microsoft Codename "Dallas"

Windows Azure in one Slide (2)



Microsoft Service Delivery Framework

How we view the “cloud”

Fundamentals



Considerations



Windows Azure Consumption Prices

Pay as you go and grow for only what you use when you use it



Elastic, scalable, secure, & highly available automated service platform

Highly available, scalable, and self managed distributed database service

Compute

Per service hour

\$0.12/hour

+ Variable Instance Sizes

Storage

Per GB stored & transactions

\$0.15 GB/month

\$0.01/10K transactions

Web Edition

Per database/month

\$9.99/month

(up to 1 GB DB/month)

Business Edition

Per database/month

\$99.99/month

(up to 10 GB DB/month)

Windows Azure platform AppFabric Service Bus & Access Control

Scalable, automated, highly available services for secure connectivity

Access Control

Per Message Operation

\$0.015/10k Message Operations

Service Bus

Per Message Operation

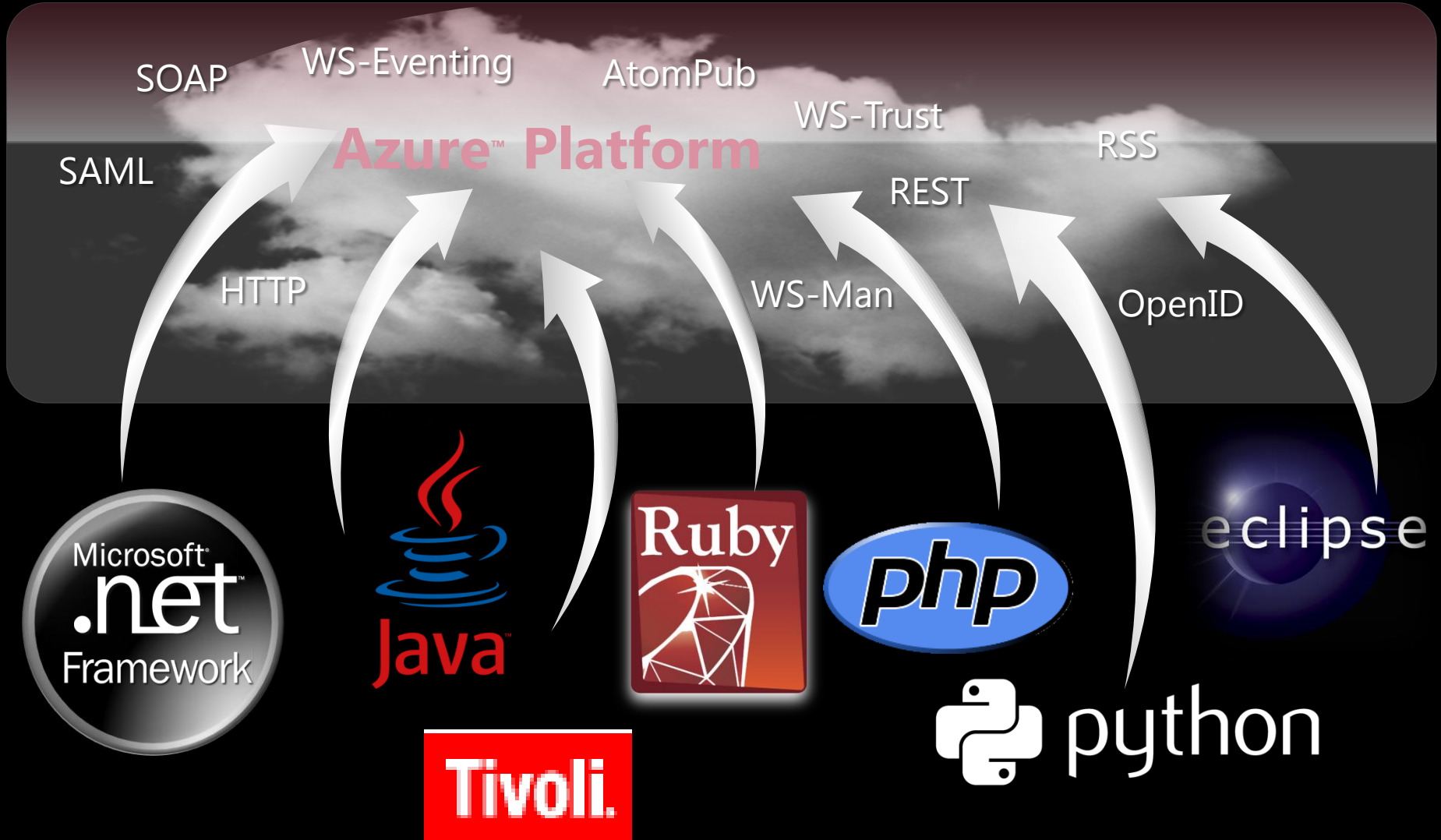
\$0.015/10k Message Operations

Application Interoperability

Azure - Interop Principles

- **Componentized platform**
 - Use any subset of the services to build apps
 - Build your own tools using service APIs
- **Language agnostic application hosting**
 - Use any framework supported by Windows
- **Language agnostic services**
 - Program against services using open web APIs
- **Connected platform**
 - Integrate with on-premises apps, identity, etc.

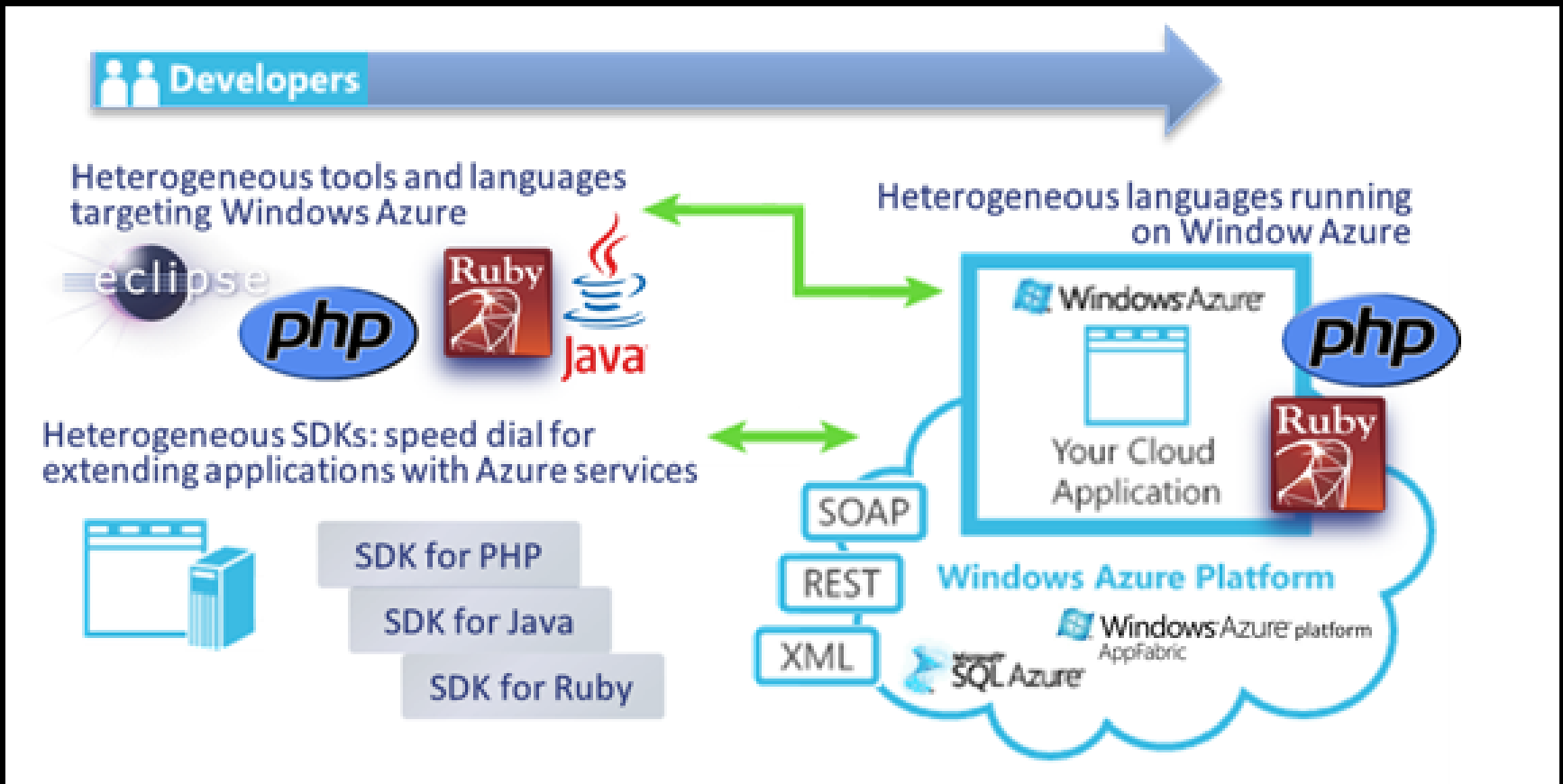
Web Standards based Interoperability



Extending existing Standards to Cloud

- **Web standards are cloud standards**
 - HTML, XML, JSON, SOAP, REST
- **Access Control Standards**
 - like SAML are cloud standards
- **Data Center and Grid Standards**
 - are merging and extending to cloud
 - OVF, SNIA CDMI,
 - Cloud-Standards.org shows SSO are working together
- **New cloud standards are emerging like OCCi**

Application Interoperability



Making Open Source Easy

- Microsoft is funding open source for Azure:
 - SDKs in Java, PHP and Ruby languages for the Windows Azure platform.
 - A plug-in for PHP developers using Eclipse to create Web apps targeting Azure
 - Future: other language tools, Eclipse frameworks, service dashboards and OpenID.
- Mixed source applications can access all Microsoft's cloud

Access Control Interoperability

Problem Statement

- The first two lines of any application
 - Who are you?
 - What are you allowed to do?
- Big architectural problem
 - **The Internet was built without any way of knowing who you are connecting to**
- Many scenarios and requirements
 - Internet, intranet, cloud, federation, thin client, rich client, ...
- Many technology choices
 - Kerberos, SAML, X.509, OpenID, ...
 - No single technology satisfies all requirements

The Claims-based Model

- **Claims-based model**

- Abstraction layer for authenticating, authorizing, obtaining information about users, devices and services

- **Claim:**

- statement made by one subject about another subject *that is in doubt*
- Email = andrasebert@microsoft.com
- Age > 21
- Role= Regional Technology Officer

- **Identity Metasystem**

- open standards-based architecture for exchange of claims under user control
- “Claims transformers” that match impedance
- Write to model, let infrastructure adapt to environment

OpenID

- Key part of Identity Metasystem
 - 50,000 destination sites
 - US Government sites to be OpenID enabled
- Major portals are OpenID providers
 - Yahoo, Google, MySpace, AOL
 - Live ID to become OpenID provider in 2010
 - Lessons learned from CTP (Oct 2008-Aug 2009):
<http://winliveid.spaces.live.com/blog/cns!AEE1BB0D86E23AAC!1791.entry>

Data Portability

Data Portability

- Users of cloud applications should have complete access to their application data
 - Mirrors Microsoft Interoperability Principles
 - Service to service direct transfer is limited by semantic issues and user permissions
- > Application level data portability is technically not an issue, but data volumes are



Important

You must ship your storage device with its power supply and interface cables.

Item	Requirement
Power	<ul style="list-style-type: none">• 120V @60Hz• Max Power Consumption: 2,000W
Interface type	<ul style="list-style-type: none">• USB 2.0• eSATA
Dimensions	The maximum device size is 8 rack units in a standard 19-inch rack, or 14 inches high by 19 inches wide by 48 inches deep.
Weight	The maximum device weight is 50 pounds.
File Formats	<ul style="list-style-type: none">• FAT32• ext2• ext3• NTFS



Important

Copyright © 2009 Amazon Web Services LLC or its affiliates

Although AWS has a number of internal controls and procedures to prevent loss, damage,

Data Access

Information as a Service

- Data or functionality that is of value to many – enabling applications, reports, BI analysis, etc...
 - Examples include GIS/Spatial, traffic, movie show times, crime, real-estate sales, financial data, navigation, census data, reviews, etc...
- Various Classifications:
 - **Commercial:** clean, supported, and regularly updated from ISVs and Content Providers
 - **Trusted Public Domain:** clean, unsupported data from academia and governments (Census, FDA, ...)
 - **Crowd Sourced:** unreliable data in the public domain from anyone and everyone

Open Data Protocol: Odata.org

- Breaks down data silos
 - to increase the shared value of data and business logic
- OData are open extensions to AtomPub
 - Released under Open Specification Promise (OSP)
- Web 2.0 access to data, but with business rules
 - Access with plain HTML, or use libraries for .NET, ATAX, PHP and Java
- Supported by:
 - SQL Server 2008 R2, SharePoint 2010
 - Windows Azure Storage, Excel 2010
 - Websphere Extreme Scale (IBM), Db4objects (Versant)
 - OpenAccess ORM (telerik), LINQpad

Codename “Dallas”

- **Information Discovery**

Discover, acquire, and consume structured, blob, and real-time data to power any application – on any platform and any screen size

- **Brokerage Business**

Partner driven ecosystem and global reach to deliver data and functionality to developers and information workers

- **Analytics and Reporting**

Single click analysis to augment private data with public data

All powered by Windows Azure and SQL Azure

Application Portability

Portability? Frameworks and Blobs

	Windows Azure	Amazon Web Services	Google AppEngine	Salesforce.com Force.com
VM with admin access		<i>Elastic Compute Cloud (EC2) VMs</i>		
Framework	<i>.NET, Java, PHP Ruby</i>	<i>.NET, Java, PHP Ruby (Windows) Java, PHP, Ruby (Java)</i>	<i>Python/Java</i>	<i>Runtime (Custom)</i>
OS Support	<i>Windows</i>	<i>EC2 VMs (Linux/Windows)</i>		
Relational storage	<i>SQL Azure Database</i>	<i>EC2 VMs (w/RDBMS)</i>		
Blob storage	<i>Blobs</i>	<i>Simple Storage Service (S3)</i>	<i>Datastore</i>	
Scale-out storage	<i>Tables</i>	<i>SimpleDB</i>	<i>Datastore</i>	<i>Database</i>
Queues	<i>Queues</i>	<i>Simple Queue Service (SQS)</i>	<i>Task Queues</i>	

Professional Developer Conference 09

Announcements

- Wordpress on Azure
- Apache, Tomcat, PHP, Python, MySQL on Azure
- Azure SDK for JAVA, PHP
- AppFabric SDK for JAVA, PHP, Ruby
- SimpleCloudAPI.org
- Windows Azure Tools for Eclipse

Links

- www.azure.com
- www.microsoft.com/WindowsAzure/interop/
- www.microsoft.com/interoperability
- www.interoperabilitybridges.com/

Partner Momentum and Opportunities



“With Azure, your ability to deliver solutions becomes much faster and you can really innovate and be competitive.”
– **Jitendra Thethi, Principle Architect**

“Cloud computing democratizes access to carrier-class data center technology with better performance, higher efficiency, and lower costs; Microsoft’s Azure adds to that integration with a first-class development platform, decades of operations experience, and a developer toolbox of customizable services.”
– **Brian Mathews - VP Autodesk Labs**

“Making a reliable cloud application can be really hard, and Azure uses .NET and Visual Studio tools we already know and that we already know how to put out into a marketplace. That’s very helpful for us and it’s helpful for our customers.”
– **Erik Johnson, Research Director**





Thank you

Microsoft[®]

Your potential. Our passion.[™]

Andreas Ebert
andreas@microsoft.com