Web 2.0 and IDS

Venkatesh Gopal
IBM

C01
Monday April 28th 9:30-10:30 AM

2008 IIUG Informix Conference

www.iiug.org

Agenda

- What is Web 2.0
- Technology components of Web 2.0
- Web 2.0 and IDS
- Driver support for IDS
- Data Studio support for IDS – Web 2.0
- Other offerings of interest

Web 2.0

To paraphrase a definition by Tim O'Reilly, who was one of the first to use the term, "Web 2.0" is web-based software which is continually collaboratively updated. This means that the software gets more useful the more people who consume and remix it. Remixing is a key concept of Web 2.0. With Web 2.0, individual users add their own data and services to collaborative web software, remixing the Web 2.0 sites into increasingly useful tools and creating an exponential growth effect.

http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html

Within 15 years the Web has grown from a group work tool into a global information space with more than a billion users. It is entering a new, more social and participatory phase. These trends have led to a feeling that the Web is entering a 'second phase'—a new, 'improved' Web version 2.0.

For example, Digg publishes news stories from around the web. Users contribute their own news stories as well as noting other publications' stories, and all users "digg" or rate them. The Diggers also add comments to the stories and rate the comments of others, too, determining the stories' prominence on the site. The more users who contribute and rate stories and comments, the more effective the service gets.

Wikipedia, an online encyclopedia based on the unlikely notion that an entry can be added by any web user, and edited by any other, is a radical experiment in trust, applying Eric Raymond's dictum (originally coined in the context of open source software) that "with enough eyeballs, all bugs are shallow," to content creation. Wikipedia is already in the top 100 websites, and many think it will be in the top ten before long. This is a profound change in the dynamics of content creation!

Sites like del.icio.us and Flickr, two companies that have received a great deal of attention of late, have pioneered a concept that some people call "folksonomy" (in contrast to taxonomy), a style of collaborative categorization of sites using freely chosen keywords, often referred to as tags. Tagging allows for the kind of multiple, overlapping associations that the brain itself uses, rather than rigid categories. In the canonical example, a Flickr photo of a puppy might be tagged both "puppy" and "cute"--allowing for retrieval along natural axes generated user activity.

Collaborative spam filtering products like Cloudmark aggregate the individual decisions of email users about what is and is not spam, outperforming systems that rely on analysis of the messages themselves.

It is a truism that the greatest internet success stories don't advertise their products. Their adoption is driven by "viral marketing"--that is, recommendations propagating directly from one user to another. You can almost make the case that if a site or product relies on advertising to get the word out, it isn't Web 2.0.

Even much of the infrastructure of the web--including the Linux, Apache, MySQL, and Perl, PHP, or Python code involved in most web servers--relies on the peer-production methods of open source, in themselves an instance of collective, net-enabled intelligence. There are more than 100,000 open source software projects listed on SourceForge.net. Anyone can add a project, anyone can download and use the code, and new projects migrate from the edges to the center as a result of users putting them to work, an organic software adoption process relying almost entirely on viral marketing.

Web 2.0 applications – Tim O'Reilly

- Web is the platform
- Harness collective intelligence
- Data is the next ***intel inside***
- No more traditional release cycle – constant updates, eternal ***beta***
  - You're updating the Service, no package to distribute and install (Saas)
- Programming models
  - Think assembly
- Seamless integration with devices
- Rich user experiences

http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html

http://en.wikipedia.org/wiki/Web_2

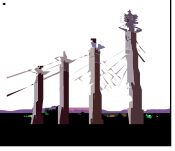
Web 2.0

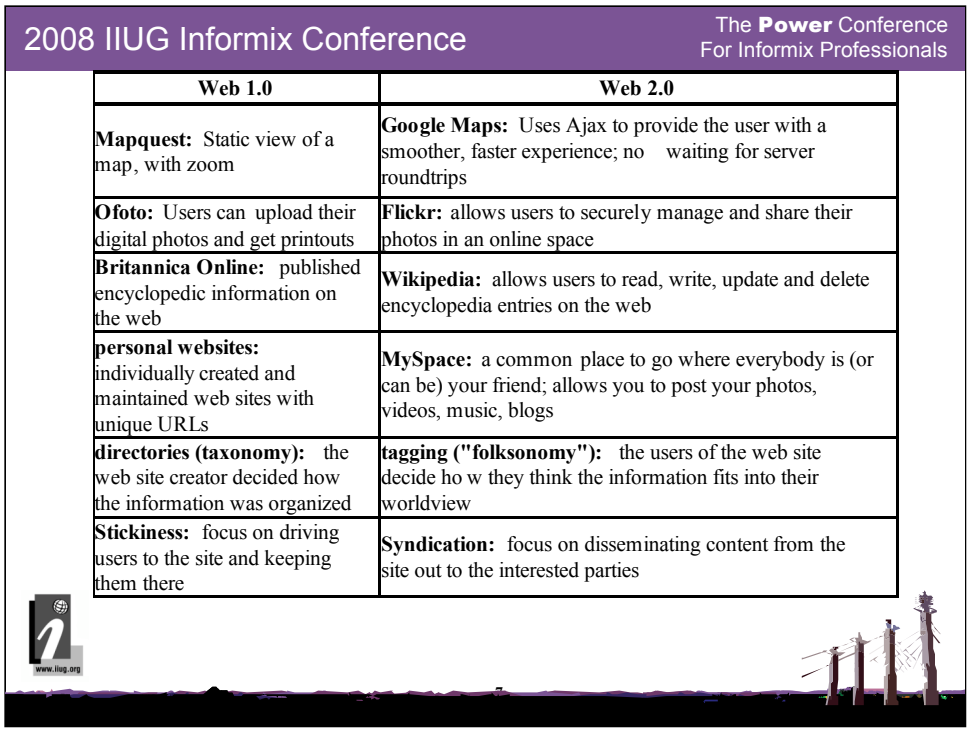
- RIA - Rich internet applications
  - Getting the desktop experience to the web
- SOA - Service oriented architecture , SaaS – Software as a Service
  - Feeds / RSS / Web Services / Mashup
- Social Web -
  - Tend to interact with the end user
  - Tagging the content
  - Wiki
  - Blogging

Popular things that you might have heard around Web 2.0

Web 2.0 strategies and technologies are already widely used in many areas of the Internet. If you haven't seen these terms in your business reading, there's a good chance you will soon.

- Wikis—Collective authoring environments that enable people to easily populate and edit a Web site based on project or community needs. Wiki is derived from the Hawaiian term for fast: wikiwiki.3
- Mash-ups—Applications that combine content from more than one source to create a new service.
- Web logs (or blogs)—Web pages where users can keep a personal diary or share information with teams, a social network, the company or the world, helping businesses to drive new viewpoints and harness the wisdom of crowds.
- Tagging—A method of tracking online items that can help you discover related items and help improve searches and expertise location.
- Folksonomy—The categorization system that emerges from tagging.





Tim O'Reilly gave examples of companies or products that embody these principles in his description of his "four plus one" levels in the hierarchy of Web 2.0-ness: [5]

Level 3 applications, the most "Web 2.0", which could only exist on the Internet, deriving their power from the human connections and network effects that Web 2.0 makes possible, and growing in effectiveness the more people use them. O'Reilly gives as examples: eBay, craigslist, Wikipedia, del.icio.us, Skype, dodgeball, and Adsense.

Level 2 applications, which can operate offline but which gain advantages from going online. O'Reilly cited Flickr, which benefits from its shared photo-database and from its community-generated tag database.

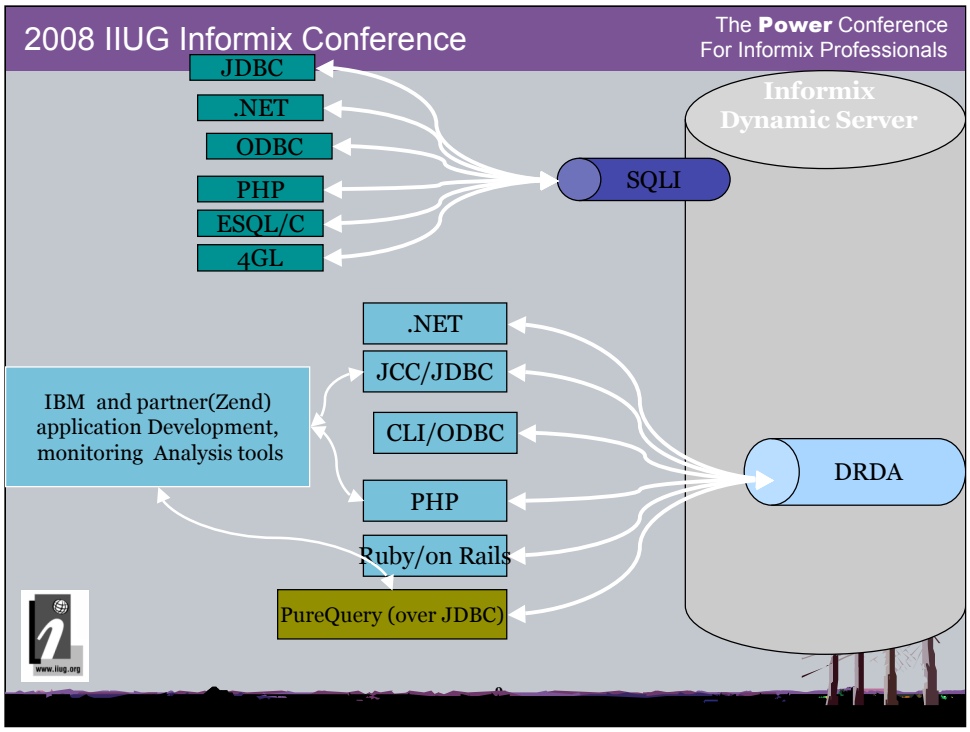
Level 1 applications, also available offline but which gain features online. O'Reilly pointed to Writely (since 10 October 2006: Google Docs & Spreadsheets, offering group-editing capability online) and iTunes (because of its music-store portion).

Level 0 applications would work as well offline. O'Reilly gave the examples of MapQuest, Yahoo! Local, and Google Maps. Mapping applications using contributions from users to advantage can rank as level 2.

non-web applications like email, instant-messaging clients and the telephone.

IDS for web 2.0

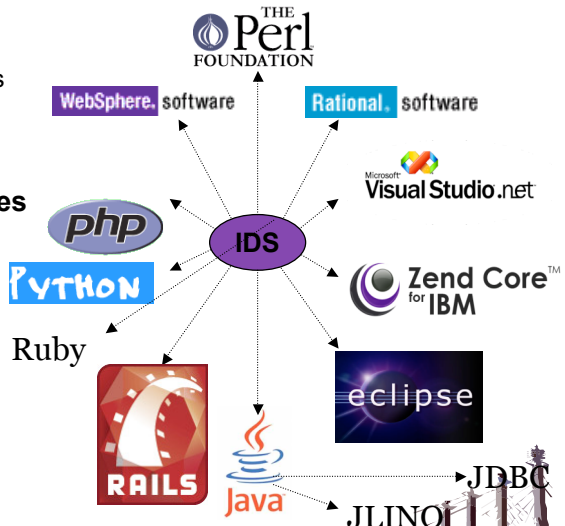
- Need for speed
  - After all these years, performance is still the king
- Solid SQL and application dev support
  - Support for open source APIs
- Low TCO is desirable for all apps, including web 2.0
- Support for XML for integration (Cheetah and further)
- Data Growth -- Ability to handle large data set with large number of connections
- Reliability


2008 IIUG Informix Conference
The Power Conference
For Informix Professionals
JDBC
.NET
ODBC
PHP
ESQL/C
4GL
SQLI
Informix
Dynamic Server
.NET
JCC/JDBC
CLI/ODBC
PHP
Ruby/on Rails
PureQuery (over JDBC)
IBM and partner(Zend)
application Development,
monitoring Analysis tools
DRDA

Updates to most of the Open source APIs are planned…

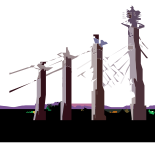
Database Application Development Technologies

- **Key Database Technologies**
  - SQL / SQL Procedures
  - XML
  - SOA / Web Services
- **Developer communities**
  - C/C++
  - Java (JDBC / SQLJ)
  - .NET (C#, VB .NET)
  - EGL
  - Open Source
    - PHP/Zend FW
    - Ruby/Rails
    - Perl
    - Python/Django



Informix and PHP

- Informix support exists as part of PHP source tree since V3
- Four PHP drivers/extensions support IDS:
  - Unified ODBC (ext/odbc)
  - PHP driver for IDS (based on esql/c)
  - PHP Data Objects: PDO_INFORMIX, PDO_ODBC
  - PDO_IBM
- All drivers are offered under open-source licenses and are available at
  - http://www.php.net
  - http://www.pecl.php.net
- IBM Informix support for PHP
  - PDO_INFORMIX (latest release 1.1.0)
    - Built on top of Informix CSDK
    - Requires PHP 5.0.3 or newer
    - Over 11,000 downloads
  - PDO_IBM (latest release 1.2.3)
    - Built on top of the common clients.
    - PHP Version: PHP 5.0.3 or newer
    - Binaries also included as part of the client distribution.
    - Over 4,000 downloads



IBM + Zend
The php Company
development partnership

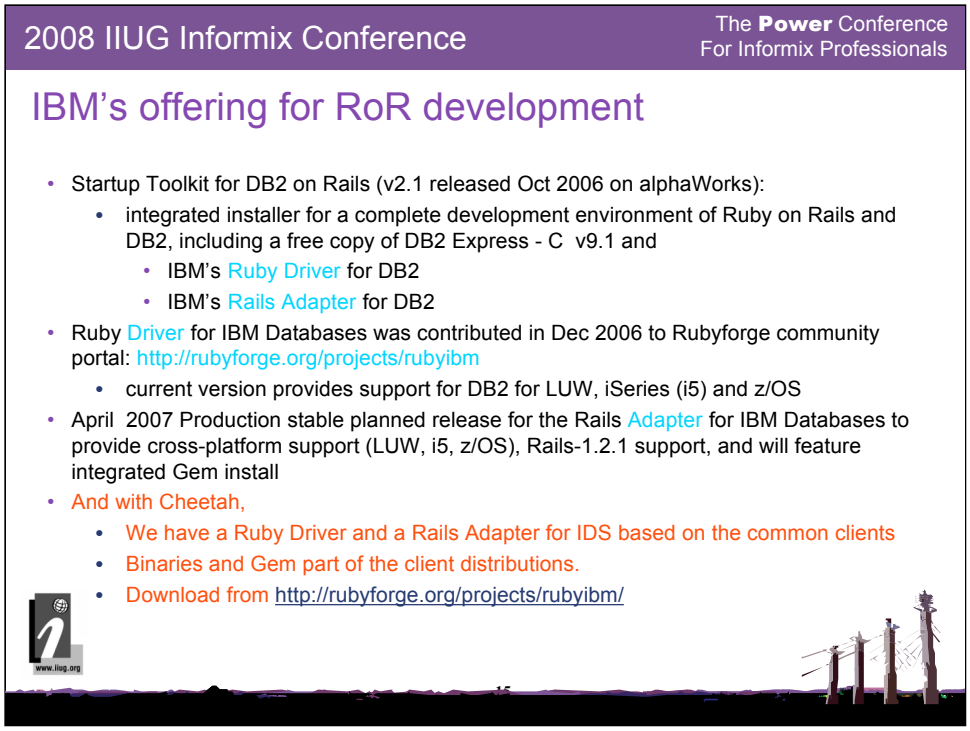
- Zend/IBM certified integrated solution to help application deploy database based applications
- One stop shop for PHP installation, rapid development , deployment and production support
- Has all the necessary PHP drivers, third party libraries, free version of databases (Cloudscape and IBM DB2 Express-C), samples, etc.,
- Seamless upgrade path to licensed versions
- ZCI 2.0 packages PDO_IBM and PDO_INFORMIX with all the other necessary components.
  - Check it out @ http://www-306.ibm.com/software/data/info/zendcore/
- Zend Framework (ZF) database abstraction

What's with Ruby and why on Rails?

- Ruby: an object-oriented programming language
  - Inspired by Smalltalk, sharing features with Python, Lisp, Dylan and CLU
  - Reflective and single-pass interpreted language (scripting)
  - Main implementation (interpreter et all) released under MIT license
- Rails (a.k.a RoR): a full stack Web framework written in Ruby
  - Extracted by its creator David Heinemeier Hanson (DHH) from his work on 37signals' Basecamp (a hosted project collaboration tool)
  - Web development made easy through "Convention over configuration" and "Don't Repeat Yourself" principles
  - Development, deployment and maintenance made easy through patterns, structure and built-in plumbing: MVC, ORM, Migrations, Testing, AJAX, etc…
  - 2006 RailsConf sold out in 5 days!
  - Rails: 2006 Jolt Award for Best Web Framework in 2006.

Released in 1995 in Japan by Yukihiro Matsumoto (a.k.a matz)

Latest stable version 1.8.5



Rails is a full-stack framework for developing database-backed web applications according to the Model-View-Control pattern. From the Ajax in the view, to the request and response in the controller, to the domain model wrapping the database, Rails gives you a pure-Ruby development environment. To go live, all you need to add is a database and a web server.

JAVA Development – Java Common Client (JCC)

- Single JDBC driver for ALL IM data servers
- The JCC driver (T4) now supports IDS Cheetah as well as DB2 servers (LUW, z/OS, iSeries and cloudscape)
  - Informix JDBC connection URLs, environment variables, data source, data types supported, isolation levels (CRLC).
  - Support for Informix extension methods
  - Goal is to keep existing application impacts to a bare minimum for applications that have adhered to JDBC standards
- All new enhancements for all databases will be worked into JCC
  - Many exciting Line Items (SDO/DAS, JDBC 4.0, pureQuery etc.,) are automatically available to IDS customers
  - The new data studio tooling will work with IDS using this driver.
  - Will also support IDS key features like Mach 11 etc.
  - New enhancements to support long database names, SSL, progressive references (lob data handling enhancements) are being considered in fixpacks this year.

Informix and .NET

- Similar to JCC, single .NET driver for all IM data servers
  - Based on the .NET 2.0 framework
  - Needs a DRDA enabled IDS server
  - Provides a DB2 namespace that will connect to the DB2 servers (LUW and z/OS) and also to IDS.
  - Provides a dedicated IDS namespace that will enable legacy IDS .NET applications to move to the common .NET provider without any changes.
  - Includes the .NET 2.0 framework elements like Base class model and factory support.
  - 64 bit version supported
  - Both legacy IDS .NET provider and the new common .NET provider can co-exist in a single box.
  - Like JCC, most of the new enhancements like MS LINQ support and Orcas support will end up in the new provider.
- Enhanced Visual Studio Tooling
  - Create a connection for the database in Server Explorer
  - Creating and dropping databases from Server Explorer
  - View existing objects(Tables, Views, Procedures, Functions) – drop existing objects
  - Retrieve and update data for tables
  - Show create script(DDL) for existing objects(tables, views, procedures, functions)
  - Run existing procedures and functions from Server Explorer
  - SQL Editor that supports intellisense
  - Create Web services

IBM Data Studio

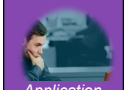
What is it ?

IBM Data Studio is a comprehensive data management solution that empowers you to effectively design, develop, deploy and manage your data, databases and database applications throughout the data management life cycle utilizing a consistent and integrated user interface

IBM Data Studio

Who will use it ?

Data Management Life Cycle

Design	Develop	Deploy	Manage	Govern
Logical Modeling Physical Modeling Integration Modeling	Java .NET Web Services PHP RUBY COBOL	Stored Procedures SQL XQuery User Defined Functions	Administration Configuration Performance Management Backup & Recovery	Data Auditing Data Archiving Data Masking Data Encryption Security Access Security Analysis
Data Modeling	***Application Development***	***Database Development***	***Database Management***	***Data Gov...nce***
				
Data Architect	*Application Developer*	*Database Developer*	*Database Administrator*	*Security Administrator*

Data Web Services

Data Web Services is a next generation solution to significantly ease the development, deployment, and management of Web services-based access to DB2 and IDS database servers.

- Generate Web services from
  - SQL statements (SELECT, INSERT, UPDATE, DELETE, XQueries)
  - Stored procedures
- Integrated Web services and data access tools within Eclipse solution
- Easy to deploy Web services into application server infrastructure
- Support for SOAP and REST styled bindings for consumers
- Support for all DB2 platforms and Informix Dynamic Server (IDS)

Generate Web services from

SQL statements (SELECT, INSERT, UPDATE, DELETE, XQueries)

Stored procedures

No Programming required

Web Service assembly done using the GUI with absolutely no coding required

Easy to deploy Web services into application server/SOA infrastructure

Web services generated are based on standards (WSDL, SOAP, XML, J2EE, JAX-RPC, WS-*)

No Code Generation

Common metadata driven runtime ensures a reliable, light weight, and robust Web application

Support for SOAP and REST styled bindings for consumers

Integrated Web services and data access tools within Eclipse solution

Support for all DB2 platforms and Informix Dynamic Server (IDS)

IBM Data Web Services

Point-and-Click SOA

Web service creation embedded in "Data" perspective

- No programming required
- Easy conversion of SQL statements and stored procedures into Web service operations

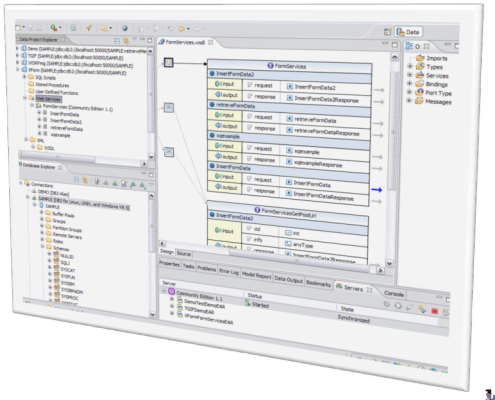
Usage of many default settings

- Makes generation of Web service quick and easy
- More complex customization possible

Automated artifact generation

- WSDL, data source configuration, runtime artifacts

Integrated deploy and test environment



- Demo of a REST service with Data Studio

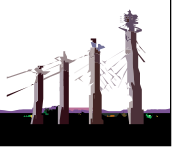
DataStudio – upcoming Web2.0 integration aspects

- Data Servers including IDS - integration for SOAP and REST service consumption
- Atom/RSS support with Data Servers – includes IDS

Web 2.0 / Info 2.0

At its center, Web 2.0 is about simple, information driven technologies and patterns. Web 2.0 offers the opportunity to easily remix enterprise data and content to quickly take advantage of new business opportunities. This remixing includes not just enterprise data in relational databases, but also departmental and personal information and everything found on the public internet. Info 2.0 leverages those opportunities for your information assets by mashing them up, remixing them, and accessing and delivering them in the following ways:

- Simplicity: empowering content-centric developers
- Data-driven: business value centered on content
- Remixability: new business opportunities to combine content
- OpenAPIs: building/extending ecosystems both with ISVs & customer collaboration
- Rich Internet Applications: improved experience leads to improved revenue
- User-generated content: encourage active participation & self organization to influence product development

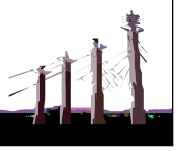


Info 2.0 and Information on Demand

Information on Demand enables enterprises to deliver trusted information, in context, to optimize business process, applications and productivity through flexible information architectures. Info 2.0 expands the power of Information On Demand by enabling enterprises to:

- Remix and augment enterprise information for dynamic business tasks
- Leverage and augment existing information assets
- Driven by business users
- Situational application development process - "mixing and mashing of data from disparate sources"

It is both about making IT Information as a Service more consumable, as well as all information consumable



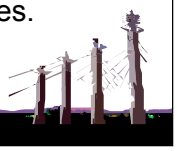
IBM Mashup Starter Kit

- IBM Mashup Starter Kit technology delivers trusted information on demand through web applications.
- IBM Mashup Starter Kit enables tech-savvy domain experts and IT professionals to generate new competitive advantage by sourcing a broader information-set, including: enterprise and departmental assets, personal databases and the public internet.

IBM Mashup Starter Kit

IBM Mashup Starter Kit is composed of two parts:

- Mashup Hub - A new-style web 2.0 catalog which stores information "feeds" or sources in RSS, Atom and XML format to enable iterative reuse and collaboration among end-users. Mashup Hub also provides an easy-to-use tool focused on Information Transformation (formerly DAMIA) where information sources can be merged, filtered, transformed, annotated or published in new formats, before being used in a mashup or saved back into Mash-up Hub.
- QEDWiki - a mash-up canvas or environment based on wiki technology within an ordinary browser. QED Wiki allows users to combine and remix feeds by linking them together in powerful ways to exploit new business opportunities.



- Demo on IBM Mashup starter kit

Session C01
Web 2.0 and IDS

Venkatesh Gopal
IBM
gopalv@us.ibm.com