

Implementing Decentralized Identity and Access Management

CDS[®]

2010



Federation of Security Professionals
Friday April 30, 2010

John Vespasiani
Managing Director, Information Security and Control Services



years at the core of Canada's capital markets

The Canadian Depository for Securities Limited

CDS Clearing and Depository Services Inc.

CDS

2010



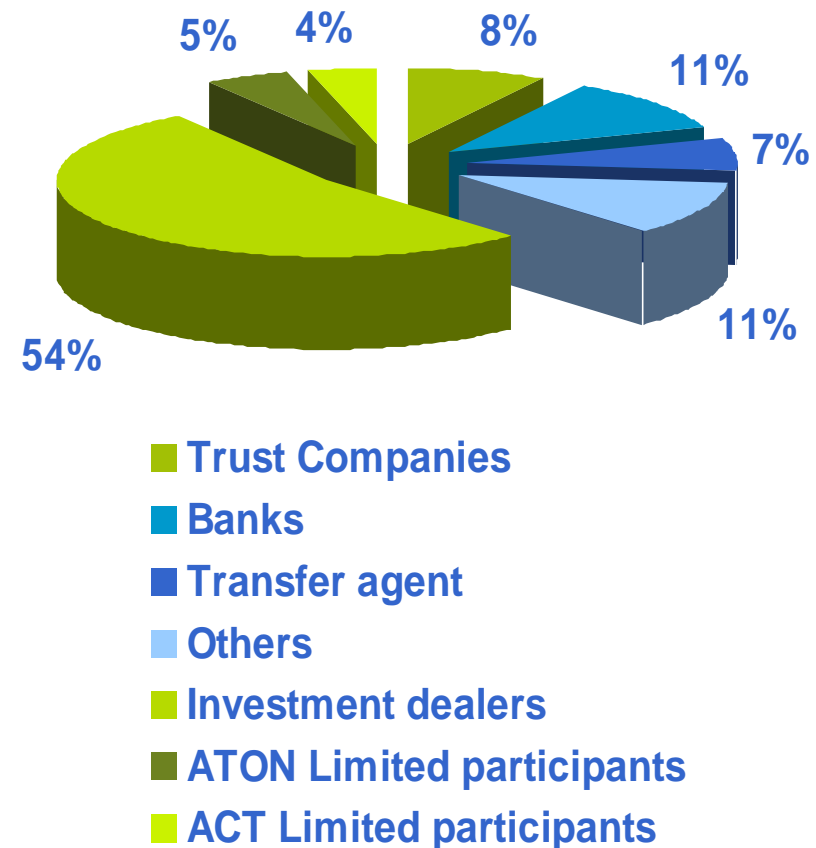
- Is Canada's national securities depository, clearing and settlement hub for equity, debt, exchange-traded derivatives
- Holds over \$3 trillion on deposit
- Over 165,000 entitlement payments processed in 2009 with a value of \$3.7 trillion
- Handles over 298 million domestic and cross-border trades annually
- Is a key securities information provider

Our customers and partners

CDS

2010

- Almost 100 participants meeting objective criteria
- Links with TSX, TSX Venture Exchange, The Depository Trust & Clearing Corporation, Canadian Payments Association
- Interfaces with transfer, paying, redemption agents and issuers
- Information services available to others



Presentation to the Federation of Security Professionals
Friday April 30, 2010

CDS's technology

CDS

2010



- Heterogeneous environment:
 - Mainframe
 - UNIX
 - Windows
 - Checkpoint firewalls / VPN gateways
 - Intrusion detection and prevention systems
 - Anti-virus, anti-spam systems
 - Directory servers
 - Identity and access management systems
 - Off-shore development
 - Outsourced network managed services

Business challenges

CDS

2010



■ Business is changing

- Securities sector is continuing to change (cross boarder, multiple currency, new products, mergers, new markets, etc.)
- Growing need to exchange information
- Regulatory requirements – Bill 198, SOX, PIPEDA, BOC, CSA, etc.
- Industry standards – Audit 5970, CobiT, etc.

Business challenges

CDS

2010



- Business is changing
- Rapid changes in information technology and processes
 - Portals
 - Identity management
 - Intrusion prevention
 - Anti-spam and anti-virus
 - Virtual directory services
 - Cloud computing
 - Clientless VPN solutions
 - etc...

Business challenges

CDS

2010



- Business is changing
- Rapid changes in information technology and processes
- Maintain system integrity and availability
- Maintain data confidentiality
- Business demands -- lower operational costs
- Measure success -- how secure are we?

Implementing IAM at CDS

CDS

2010



- Initiated a formal project:
 - October 2008 through July 2009
- Leveraged experience
 - External consultant
- Documented business requirements and high-level design
 - Held a number of working sessions:
 - facilitated by the external consultant
 - Included IT and Business
- Finalized project plan
- Delivered a detail design document
 - Approved by both IT and Business
- Built three environments – DEV, UAT, PROD
- Implemented the first application in August 2009

What was implemented

CDS

2010

- Access governance
 - CDS maintains global security policies -- ID naming standards, password standards, etc.
 - Standard identification and authorization model
- Two different administration roles at each customer site
 - Web User Administrator - manage user IDs and passwords
 - Web Access Administrator – manage access to applications
- A Workflow process – maintained by CDS
 - Manages all access request distribution – user ID and application
 - Provisions both user ID and application access
 - Provides password synchronization between web applications and the mainframe

What was implemented

CDS

2010

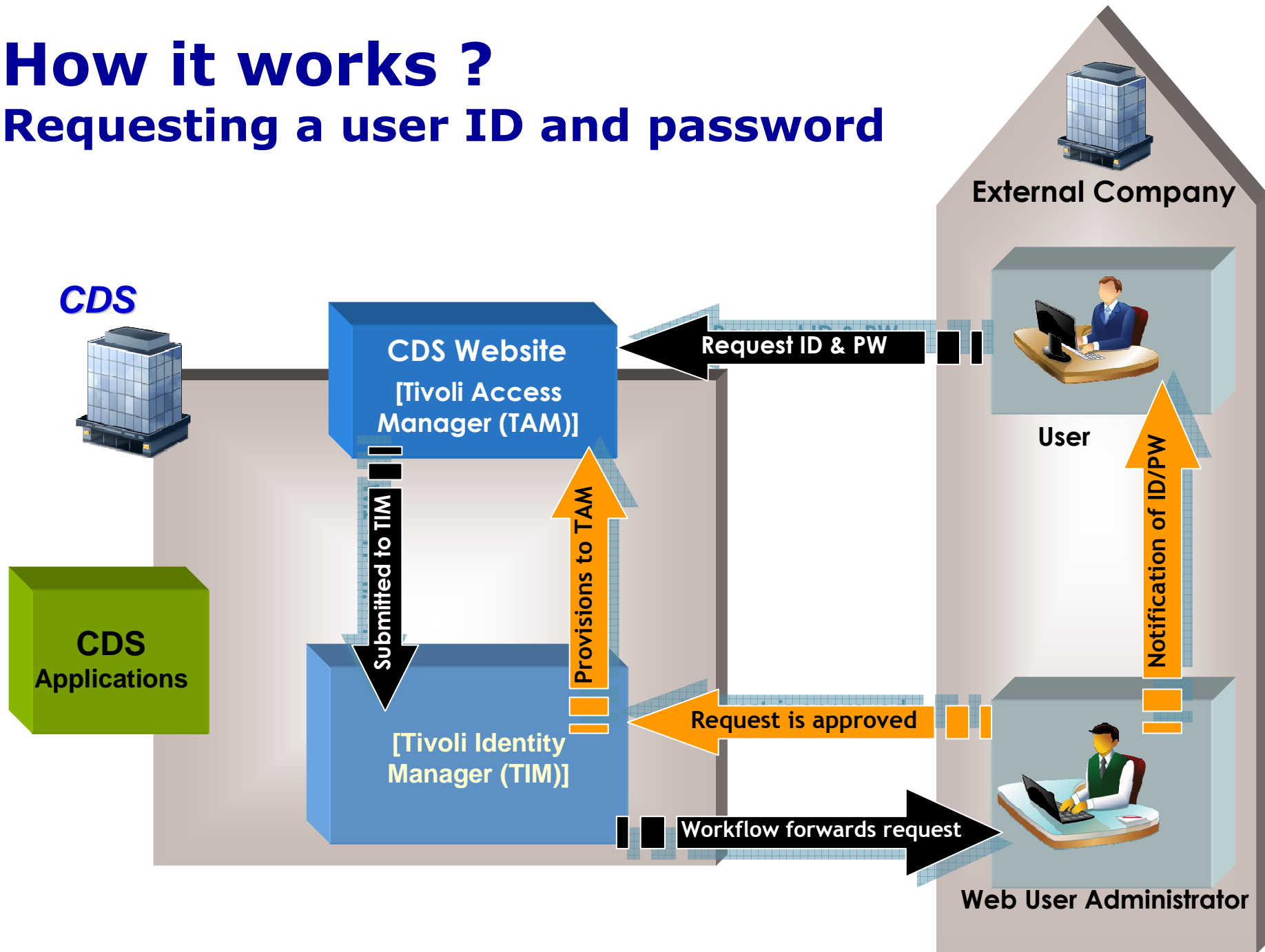


Provides CDS's customers the ability to:

- Add, remove and change user profile information
- Manage access within their company -- organizational unit
- Have one password, which can be used for both Web based and Mainframe access
- Create reports -- audit reports, user-related information, access-related information, etc.. -- within their organization unit
- Single sign-on across all CDS web applications
- Maintain their current unique internal control processes for:
 - determining the user's authenticity
 - access approvals
 - password distribution

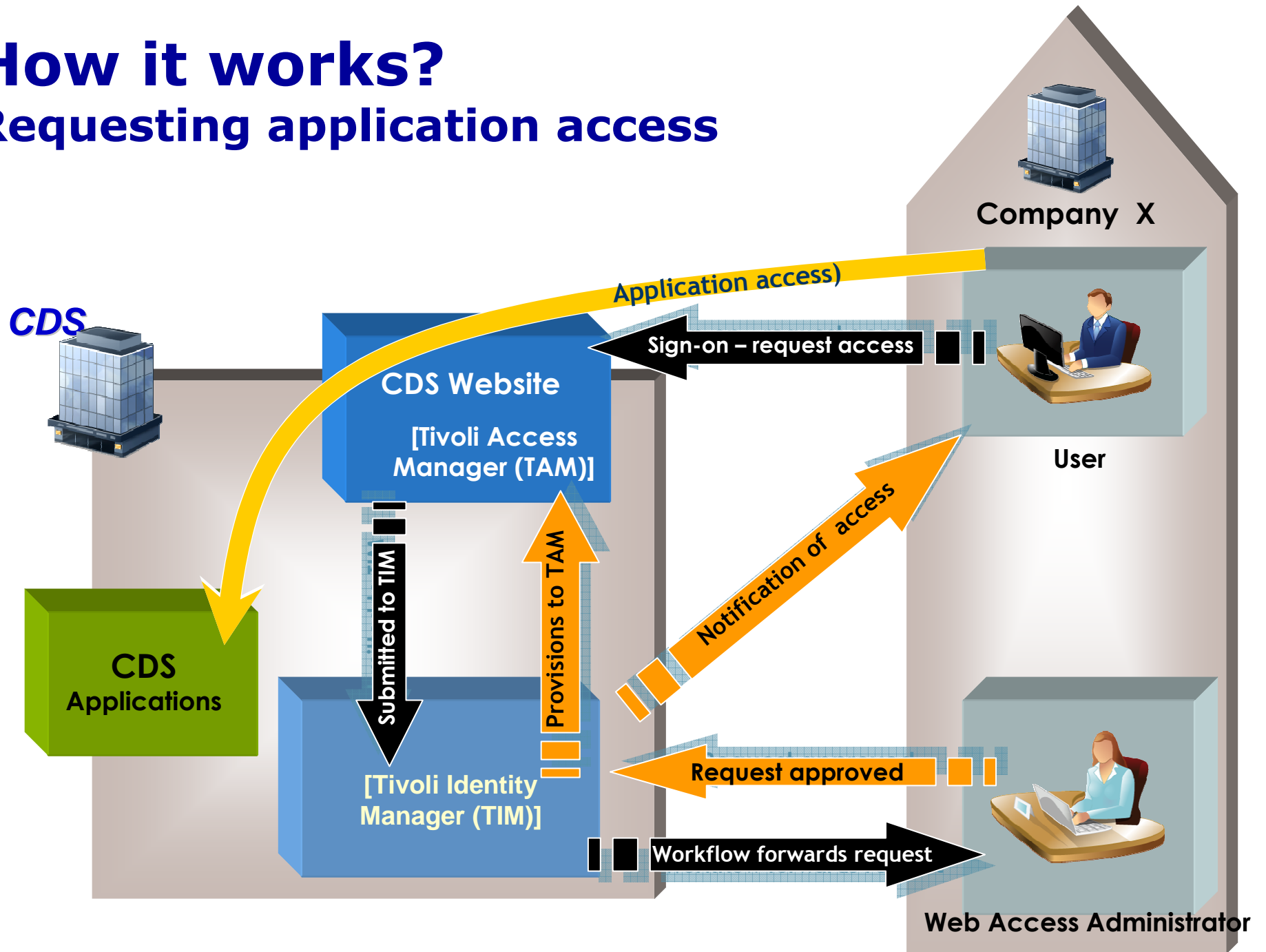
How it works ?

Requesting a user ID and password



How it works?

Requesting application access



Challenges

CDS

2010



- Knowledge Transfer
 - CDS used on-site and off-shore consultant support and time-zones weren't taken into consideration
 - Training 100+ external web user and web access administrators
- Scope creep
 - As the business realized the software capabilities, additional requirements were added throughout the project
- User interface
 - Assessment of how the application integrated with CDS's branding
- Hardware requirements
 - Difficult to estimate without having experience with this software, environment and not knowing the application loads, etc...

What worked well

CDS

2010

- Fixed price contract with vendor
 - Payment schedule, based on deliverables
 - Ensured focus
- Formal training for the project team
 - In-house training was conducted to provide for a consistent understanding
- Decentralized administrator training for customers
 - Performed by Customer Service
 - Ensured clear understanding of the administration processes
- Leveraged experience in identity and access management implementations

Implementing Decentralized Identity and Access Management

CDS[®]

2010



Federation of Security Professionals
Friday April 30, 2010

John Vespasiani
Managing Director, Information Security and Control Services



years at the core of Canada's capital markets

The Canadian Depository for Securities Limited