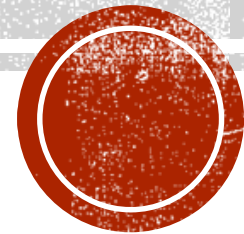


SECURING PRODUCT DATA IN PLM

Purdue University PLM Center of Excellence

March 23, 2016



Globalization
+
Digital Transformation


=

New Era of Intellectual Property Theft



Digital Economy

Resource Optimization



It is projected that **\$1.77 trillion in counterfeit and pirated goods** will be sold globally in 2015.

Source: International AntiCounterfeiting Coalition, Counterfeiting adds up



COST OF PRODUCT DATA LOST

- **>45% of all US businesses have reported theft of digital information**
- **Cost >\$300 billion a year to US economy**
 - **Source: Center of Strategic and International Studies**
- **Consequences:**
 - **\$101.9 million in lost revenues and incurred costs of \$1.4 million each**
 - **58% loss of employee productivity**
 - **41% loss of customer confidence / loyalty / damage of brand**
 - **38% loss of business to a competitor**
 - **Decrease incentives to innovate**
 - **Source: US ITC & EMC RSA**



THREAT VECTORS

- Cyber criminals / malicious actors / espionage
- Insiders / contractors
- Supply chain / foreign partners
- System failure / legacy systems
- Accidental breaches
- Mobile devices
- Collaboration / information sharing activities
- Shadow IT



CYBERSECURITY LEGISLATION – 114TH CONGRESS (2015-2016)

- HR 1073 – Critical Infrastructure Protection Act (CIPA)
- HR 104 – Cyber Privacy Fortification Act of 2015
- HR 451 – Safe and Secure Federal Websites Act of 2015
- HR 580 – Data Accountability and Trust Act
- HR 726 & S 135 – Secure Data Act of 2015
- S 754 – Cybersecurity Information Sharing Act of 2015
- HR 1704 – Personal Data Notification and Protection Act
- HR 1770 & S 177 – Data Security and Breach Notification Act of 2015
- HR 1731 – National Cybersecurity Protection Advancement Act of 2015



TECHNOLOGY / KEY ENABLER

- Data-centric Security
 - Federated Identity
 - Data Classification
 - Dynamic Authorization
 - Enterprise Digital Rights Management (EDRM)
 - Attribute-based Access Control (ABAC)
- Integrating / Embedding EDRM technology into PLM ecosystem
- Cloud – a catalyst for faster adoption and better security
- Open Source
- Data Governance Practice



STANDARDS EFFORT

- **Catalyst:**
 - NIST, OASIS
 - PLM CoE and industry bodies / communities (e.g. TSCP)
- **Standards:**
 - SAML, OAuth
 - XACML
 - Crypto
 - EDRM effort is in progress
 - 3D Model Format is essential
- **Digital Identity:**
 - Federated identity / universal identity



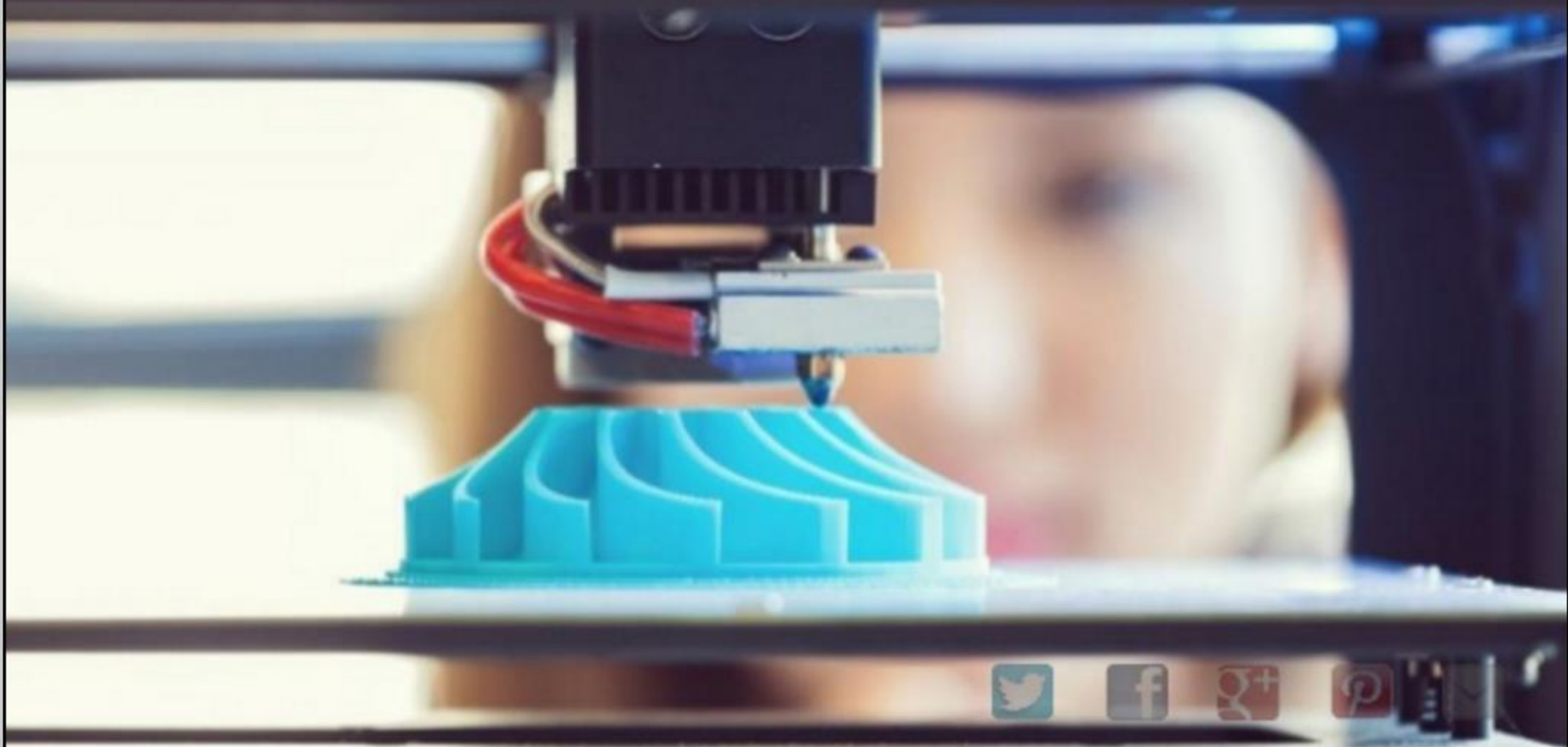
The Future of Product Design

=

Model-based Design (3D Model)



Resource Optimization



3D printing usage will **grow 2,000% from 2015 to 2030.**

Source: SAP Center for Business Insight 2015 calculation based on Forbes, Roundup Of 3D Printing Market Forecasts And Estimates



IT IS POSSIBLE TO SECURE 3D MODEL END-TO-END

- It has been done before
- Case study: media industry
- Consumer DRM:
 - Industry collaboration
 - Common format
 - Standards
 - Cross-licensing
 - Built-in decoder in the players



THANK YOU

Keng Lim

keng.lim@nextlabs.com

NEXTLABS[®]

