



# eCommerce Basics

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The Building Blocks of eCommerce  
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# Commerce

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“Transactions of Goods and Services between business partners (B2B) and between business and consumers (B2C)”



# eCommerce

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“The process of adding the letter ‘e’ to create every possible high-tech sounding industry buzzword and catchphrase.”



# Building Blocks

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- Legal Infrastructure
- Communications
- Transactions
- Security
- Electronic Documents
- Electronic Signatures



# Legal Infrastructure – UETA

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- Uniform Electronic Transactions Act
- State law blueprint, completed in July 1999
- States can adopt, with or without customization
- 41 states + DC have adopted so far



# Legal Infrastructure – E-SIGN

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- Electronic Signatures in Global and National Commerce Act
- Modeled after UETA – uniform national set of rules for e-commerce
- Took effect in October 2000
- Overrides states that have not adopted UETA, or that modified it in adoption
- Bottom line: “e” signatures can bear same legal weight as “wet” signatures



# Communications

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- E-mail
- Internet
  - Public (unencrypted)
  - Secure (encrypted – SSL)
  - VPN (Virtual Private Network – secure point-to-point connection using the internet)
- Private networks
  - Secure lines between business partners



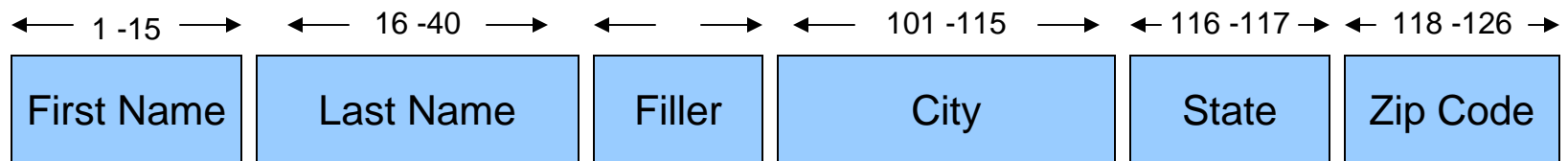
# Transactions

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- B2B – Business to Business
  - Originally – custom transactions between each pair of partners
  - Standards evolution
  - Transaction sets for specific industries
- B2C – Business to Consumer
  - Internet purchases
  - E-mail confirmations

# Transactions – Examples

- Delimited – comma, quotes, tab, etc
  - “Firstname”;“Lastname”;“Address”;etc...
- Fixed-length text



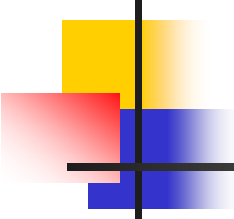
- X12
  - Fixed-length fields, extensive pre-defined codes
- XML
  - User-definable elements, extensible



# Security – Components

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- Identification & Authentication
- Encryption
  - Data
  - Messages
  - Web sessions
- Tamper-evident sealing
- PKI



# Security – PKI 101

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- PKI = Public Key Infrastructure
- Key Pairs: Each Public Key has a corresponding Private Key
- Docs encrypted with one key can be decrypted by the other key (but NOT by the same key)
- Private key stays secret, public key is... public!
  - You send docs encrypted with your private key
  - You receive docs encrypted with your public key
  - Thus: secure encryption without ever revealing your private key

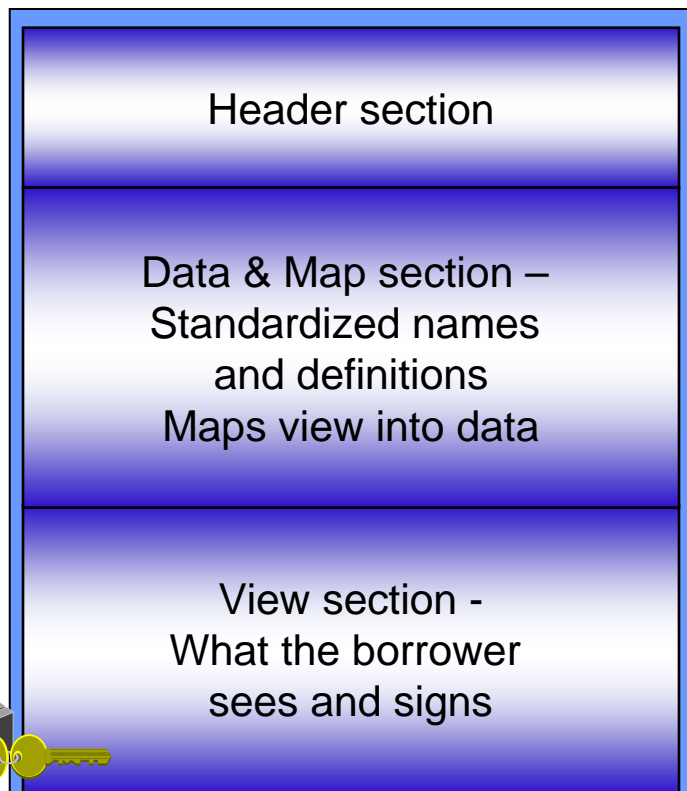


# SMART Document

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- Securable, Manageable, Archivable, Retrievable, Transferable document
- VIEW – what the buyer sees and signs
- DATA – XML that can be processed by automated systems
- MAP – links VIEW to DATA
- SIGNATURE – allows business parties to sign, also allows tamper-evident seal around entire SMART Doc

# SMART Doc Visualization



Digital Signature makes it tamperproof

```
<DocType>note</DocType>
```

```
<ClosingDate>20030501  
</ClosingDate>
```

Note:

May 1<sup>st</sup>, 2003  
Closing Date



# Levels of "Smartness"

Category	Header	Data	View
1	Yes	Data (Arcs)	XHTML
2	Yes	No	XHTML
3	Yes	Data	Image View
4	Yes	No	Image View
5	Yes	Data	No View
6 (Other)			



# Electronic/Digital Signatures

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- Electronic – signature pad
  - Best Buy, Home Depot, etc
- Digital – applying PKI digital certificate
  - Can be used for the “legal” signatures required on an electronic contract, or
  - Can be applied as tamper-evident seal to secure an electronic document



Thank you!

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