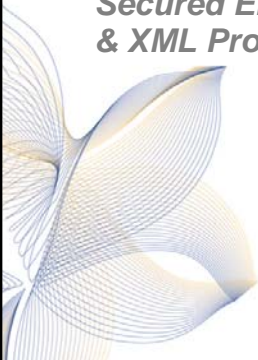


## Secured Electronic Transcripts & XML Processing



*Penn State University,  
J. James Wager*  
*University of Chicago,  
Thomas Black*

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## Today's Agenda

- **Today's Transcripts: Issues & concerns**
- Penn State's deployment of Certified Transcript Services (CTS)
- Other On-line alternatives
- Audience discussion

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## Protecting a Student's Record

- **From unaltered representation**
  - Safety paper
  - Tamper proof envelopes
- **From unauthorized release**
  - Written signature
  - Acceptable eSignature
- **Delivery**
  - Commercial carriers
  - Trusted networks

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## Typical Transcript Order Process

- Student orders transcript on the Web, by letter, or in person
- Order process often outsourced
- Payment by credit card, check, cash, student account, or pre-paid at time of matriculation
- Hard copy deliver by U.S. mail or commercial carrier (FedEx, UPS, etc.)
- Electronic delivery by EDI



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## Student and Alumni Transcript Delivery Issues

- Sending by mail is too slow
- Overnight delivery is expensive
- Did the school receive my request?
- Did the recipient receive the transcript?
- Need an additional notary certification (foreign)



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## Transcript Delivery Issues

- Send tens of thousands of transcripts per year
- Labor intensive
- Non-deliverable postal addresses
- No confirmation of delivery and receipt
- Expensive to produce
- Widening gap of service level vs. student demand for real-time delivery
- Fraud



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## Electronic Delivery Options

- EDI – active installed base
- XML – promising future
- eMail – not secure, privacy & authenticity issues
- PDF – intriguing, but concerns of authenticity & integrity

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## Electronic Delivery Options

- EDI – active installed base
- XML – promising future
- eMail – not secure, privacy & authenticity issues
- PDF – intriguing, but concerns of authenticity & integrity

[Until now – certified PDF documents](#)

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## Today's Agenda

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## Electronic Documents & Trust

**Improve Customer Service**



**Increase Operational Efficiencies**



**Meet Policy and Compliance Mandates**



- **Organizations only realize the advantages of electronic documents, if recipients trust and use them**
- **Authenticity** – Where did a document come from?
- **Integrity** – Has a document been altered?




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## Document Fraud Impact

- **Impact of Diploma Mills**
  - Number estimated at 400+ in the U.S. alone
  - Recent estimates - \$200 million dollar industry and growing
  - *“It is truly a national, indeed an international, epidemic in which hundreds of thousands, very likely millions, of people are using degrees they did not earn.”*

- Ezell, Allen & Bear, John, Degree Mills: the Billion-Dollar Industry That Has Sold Over a Million Fake Diplomas

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## Penn State deployment using the CTS solution

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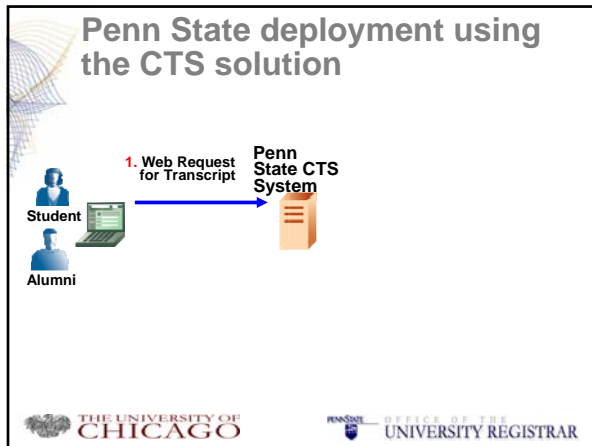
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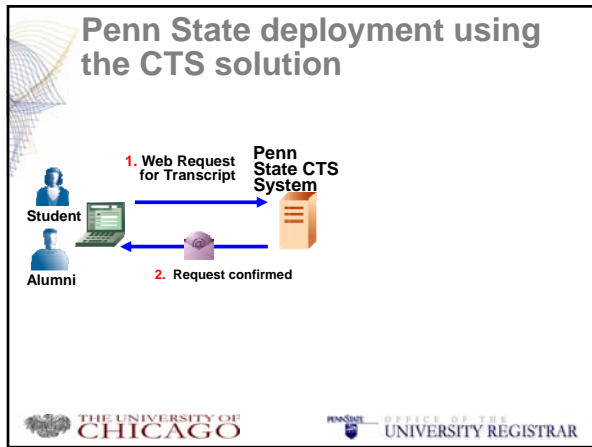
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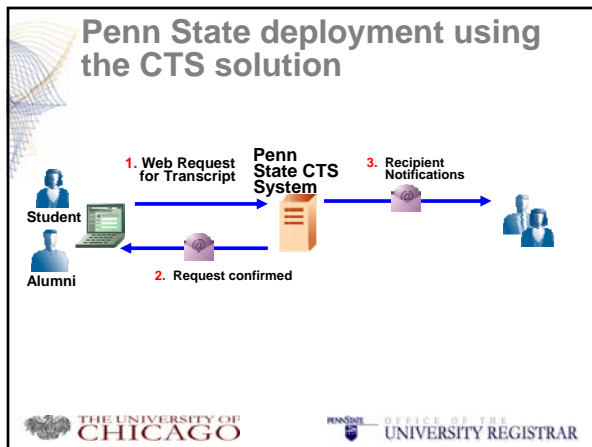
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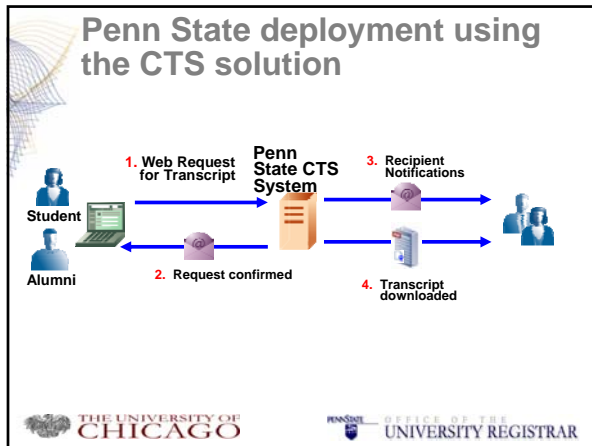
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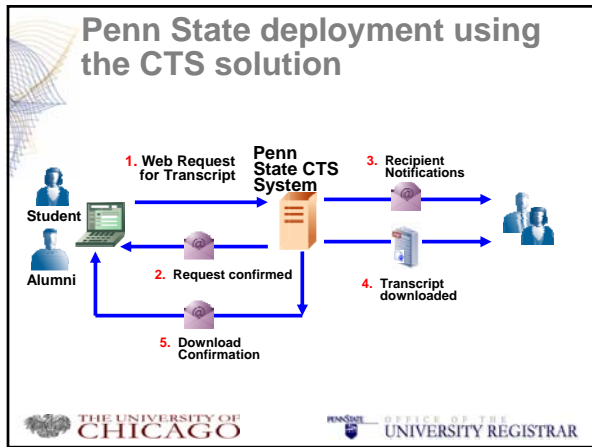
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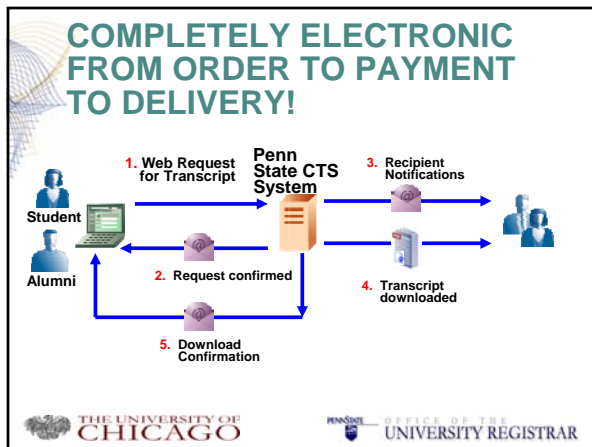
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## Notification to requestor – transcript has been fulfilled

This message is to inform you that your request for an official transcript has been received and fulfilled. The details of your order and our fulfillment follow:

**Transcript Recipient**  
 114 Shields Building  
 University Park PA 16802  
 JJW1@PSU.EDU

**Fulfillment date:** 09/11/2005  
**Level:** Undergraduate Level  
**Copies:** 1  
**Delivery:** Electronically delivered. The recipient has been notified that your transcript is available for retrieval. You will receive a confirming message when the transcript has been retrieved.




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## Notification to receiver – part 1 of 2

This message is to inform you that:



**NITTANY LION**

has authorized that an official copy of their Penn State transcript be delivered to you electronically as a certified PDF document. To view the transcript, you will need to have a copy of Adobe Reader 6.0 or higher installed on your computer.

To insure the highest degree of privacy, you will be receiving a second email message that will contain additional information you will need to view the requestor's transcript. To view the transcript:

- Copy the following URL into your browser (Internet Explorer 6.0 or higher is recommended).

<http://CTSWEB.our.psu.edu:8080/CTS/RetrieveTranscript.action?recipientID=30b8273c-8f98-496d-99a5-d1eabe90e87b>

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## Notification to receiver – part 2 of 2

This message is to inform you that:



**NITTANY LION**

has authorized that an official copy of their Penn State transcript be delivered to you electronically as a certified PDF document. To view the transcript, you will need to have a copy of Adobe Reader 6.0 or higher installed on your computer.

To insure the highest degree of privacy, you have been sent two email messages. The first message contained the URL.

- Please copy that URL into your browser. (Internet Explorer 6.0 or higher is recommended).
- Enter the following credential into the Penn State Certified Transcript Service Web site.

Penn State Document Number: 050911JJW1001\_001

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## Notification to requestor – transcript has been retrieved

This message is to inform you that your request for an official transcript to be delivered to:

Transcript Recipient  
JJW1@PSU.EDU

has been electronically retrieved by the recipient.

Thank you for using the Penn State Certified Transcript Service.



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## CTS Provides Automatic, Simple Validation Status

- When viewed by the recipient, a CDS signed document will automatically validate and provide one of three outcomes:

### Certification valid



GISTRAR

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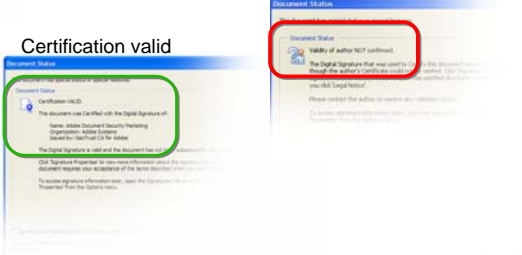
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## CTS Provides Automatic, Simple Validation Status

- When viewed by the recipient, a CDS signed document will automatically validate and provide one of three outcomes:

### Author not confirmed



GISTRAR

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## CTS Provides Automatic, Simple Validation Status

- When viewed by the recipient, a CDS signed document will automatically validate and provide one of three outcomes:

**Certification valid**

**Document Status**

**Certification Valid**

The document was certified with the Digital Signature of the following:

Legal Name: John Doe  
 Email Address: john.doe@university.edu  
 Signature: Certified by the issuer.

The Digital Signature is valid and the document has not been altered.

**Author not confirmed**

**Document Status**

**Validity of author NOT confirmed**

The Digital Signature that was used to certify the document does not match the address of the issuer.

Please contact the author to verify the certification.

**Certification invalid**

**Document Status**

**Certification Invalid**

The Digital Signature that was used to certify the document is not valid.

GISTRAR

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## Benefits

- Delivery within minutes
- Recipient already enabled
- No additional student fee
- Fully integrated with current Web order process
- Complete tracking and notification of the transcript from order to delivery
- Ability to notify the requestor and recipient if transcript not downloaded
- Recipient needs to take no desktop action

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## Trusted Agency Model

- Your trusted vendors (i.e. order processing vendors) add security features to the data and deliver transcripts on your behalf
- Digitally-signed PDF's delivered by dispatching vendor/service



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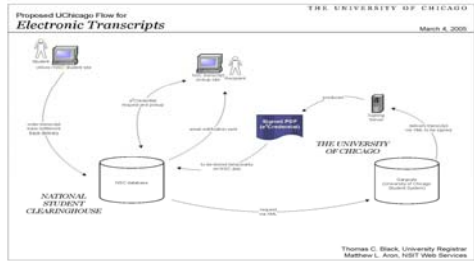
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## Combinations: expanding vision

### CTS or (?), XML & Trusted Agency Model



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## On-line-delivered Transcript Acceptance Challenges

- Phishing, viruses, and other internet evils!
- Traditional use of paper
- General awareness and education
  - Recipients: Higher Education & Businesses
  - Requestors: Students & Alumni



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**Discussion**

**Follow-up with:**

*Penn State University, J. James Wager*  
> [jjw1@psu.edu](mailto:jjw1@psu.edu)

*University of Chicago, T. Black*  
> [tblack@uchicago.edu](mailto:tblack@uchicago.edu)

 THE UNIVERSITY OF CHICAGO

 OFFICE OF THE UNIVERSITY REGISTRAR

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