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A SAP-UI5 application for students to upload the Master's thesis to SAP.

Dominique Vandenbussche & Inge Wullaert KU Leuven (Belgium) Session I-3

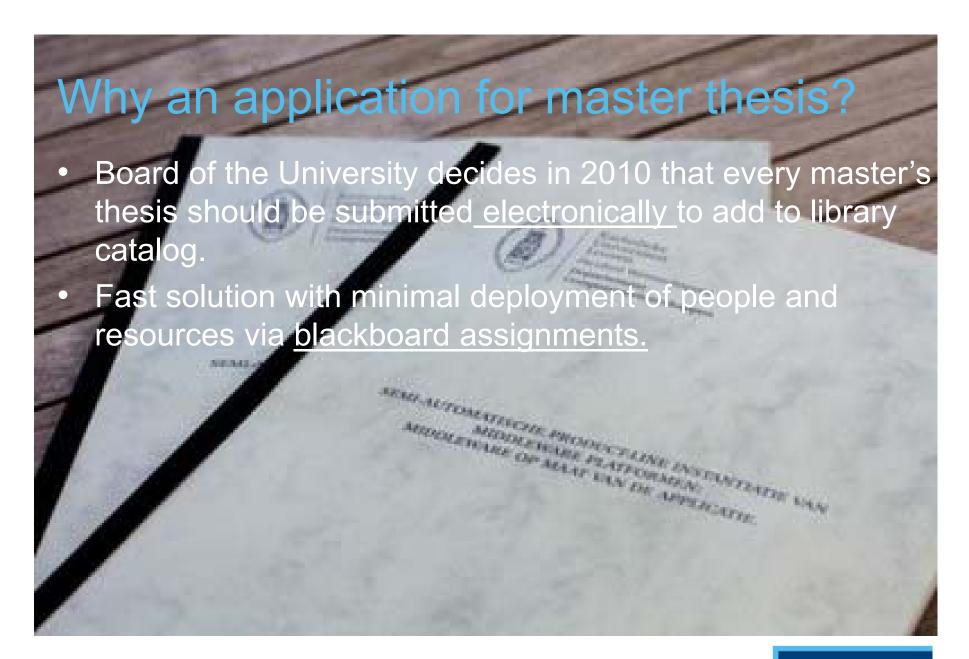
HERUG April 12, 2016 – Durham



Agenda

- Why an application for master thesis?
- Phase 1
 - Deliverables
 - Project approach
 - Technical challenges
- Phase 2
 - Deliverables
 - Turnitin integration





Disadvantages Blackboard Solution



- The procedure is course/community-based instead of student based
- Not user friendly (too many clicks)
- The transfer to the <u>Library</u> requires a lot of sending backand-forth of large/huge files
- No good solution to send Meta data (double entry of data)
- There is no good way to communicate <u>embargoes</u> to the Library software
- No integration with examsystem and individual work in SAP
- Not enforceable



TO BE OBJECTIVES

- Meta data
 - Faculty
 - Program
 - name student
 - name master thesis module
 - 0

directly introduced and available in SAP system.

No redundancy and possible mistakes

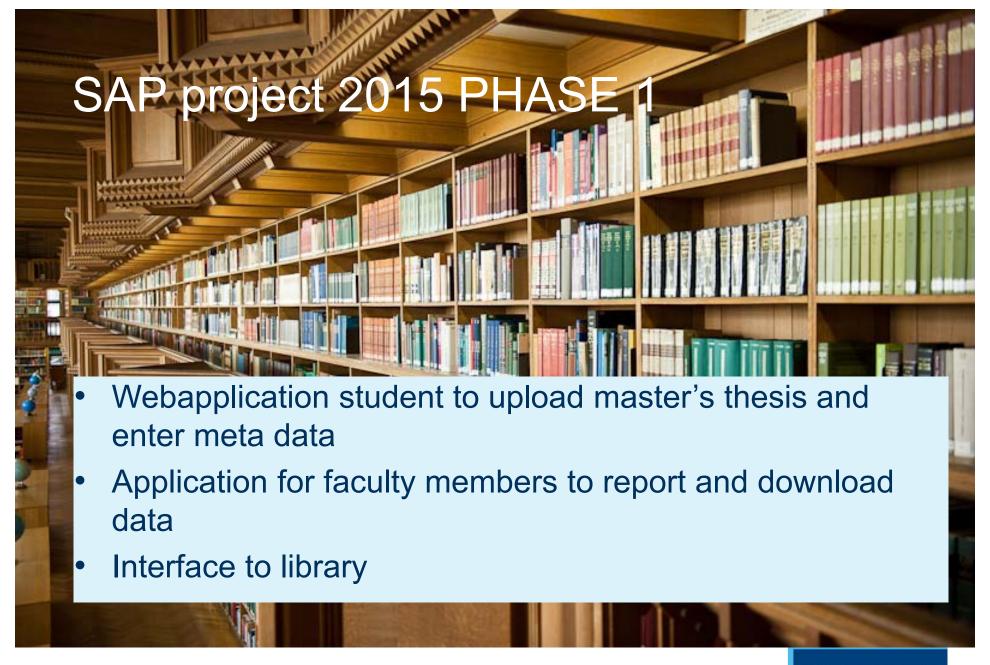


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Phase 1



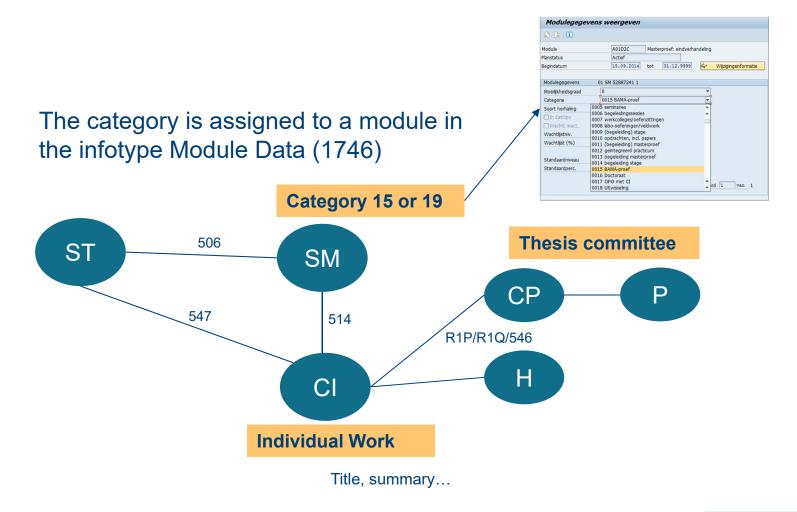


Overview Master's Theses KU Leuven

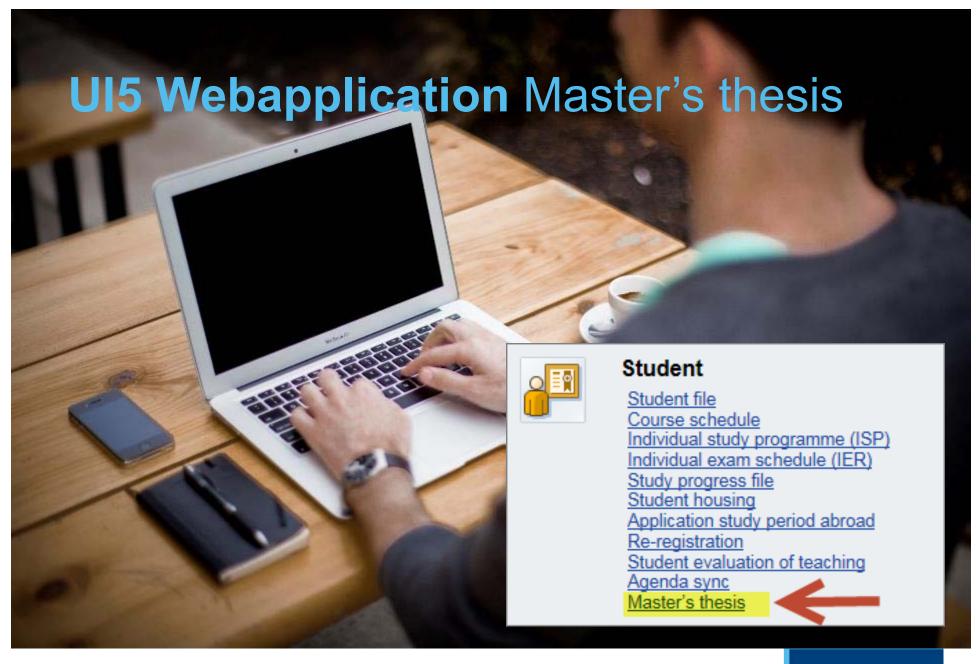
Faculty	Amount of Master thesis course units	Amount of students taking a masterthesis course
Faculteit Theologie en Religiewetenschappen	10	176
Institute of Philosophy	3	189
Faculty of Canon Law	4	35
Faculty of Law	14	1018
Faculty of Economics and Business (FEB)	21	1008
Faculty of Social Sciences	15	793
Faculty of Arts	32	1226
Faculty of Psychology and Educational Sciences	5	16
Faculty of Science	34	528
Faculty of Engineering Science	58	1324
Faculty of Bioscience Engineering	34	385
Faculty of Engineering Technology	57	3131
Faculty of Architecture	16	304
Faculty of Medicine	28	1109
Faculty of Kinesiology and Rehabilitation Sciences	6	420
Faculty of Pharmaceutical Sciences	7	195
Total	344	12.557



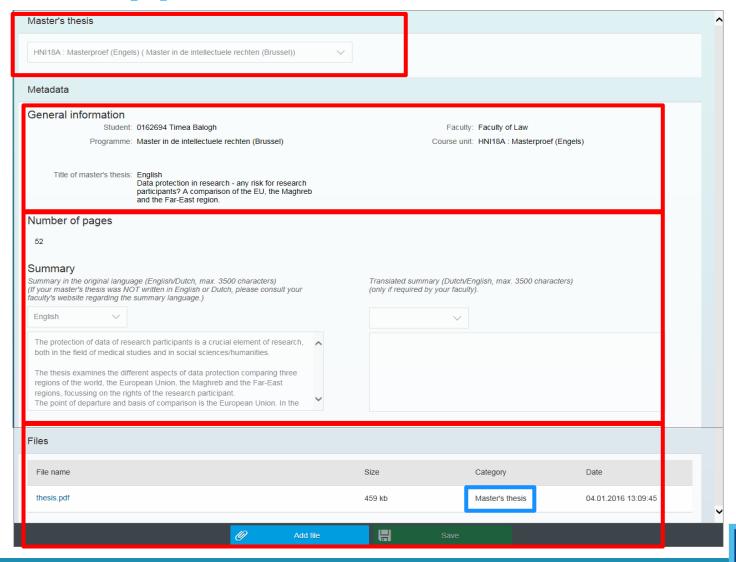
Master's thesis datamodel in SAP





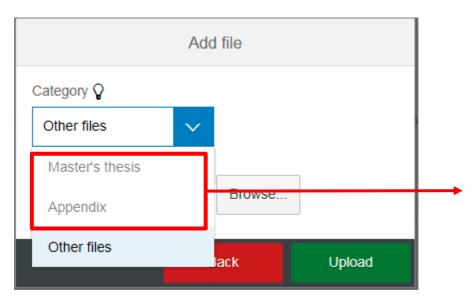


UI5 application Masterthesis



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3 submission deadlines per year



- 3 deadlines per year.
 Before each exam period (january, june, september).
- 5 weeks before deadline Master's thesis and Appendix can be uploaded.

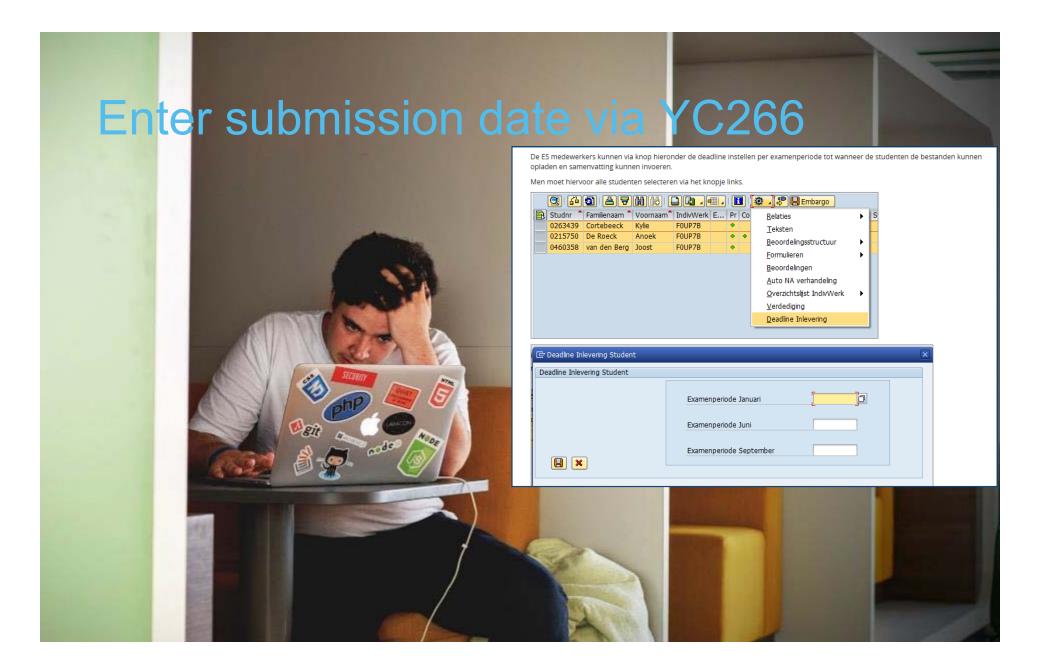


Deadlines and embargo via YC266

 Possibility to enter submission deadlines and embargo's for faculty members via a dedicated transaction YC266 (maintain individual work)

electie Individueel Werk			
Academiejaar	2014	2014 - 2015	
Examenperiode	6	Evaluatie Juni	
♣ Faculteit	50000600	Faculteit Geneeskunde	
പ്പീ Opleiding	51016850	MA manag. & beleid gezondheidszorg (oud	
	0		
Stage / Verhandeling	0472446	Schiepers, Katleen	
Lid Evaluatiecommissie Familienaam Voornaam	Embargo	Vertaalde en originele titel en samenvatting en hoofdtekst en	Aantal studenten Deadline indiene
3 6 3 A 7 M		👺 🗸 👺 📙 Embargo	student

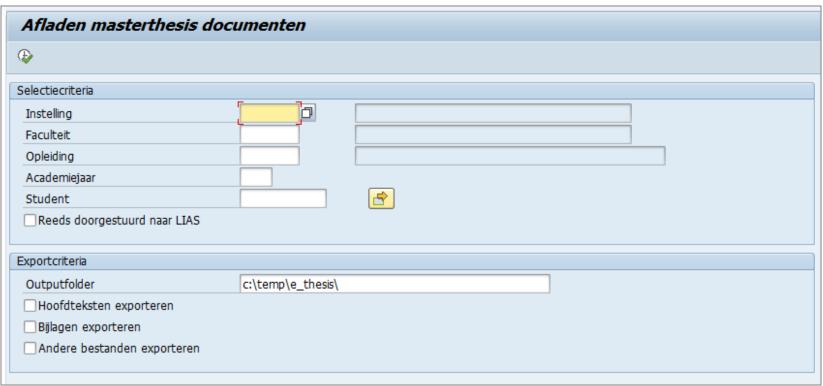






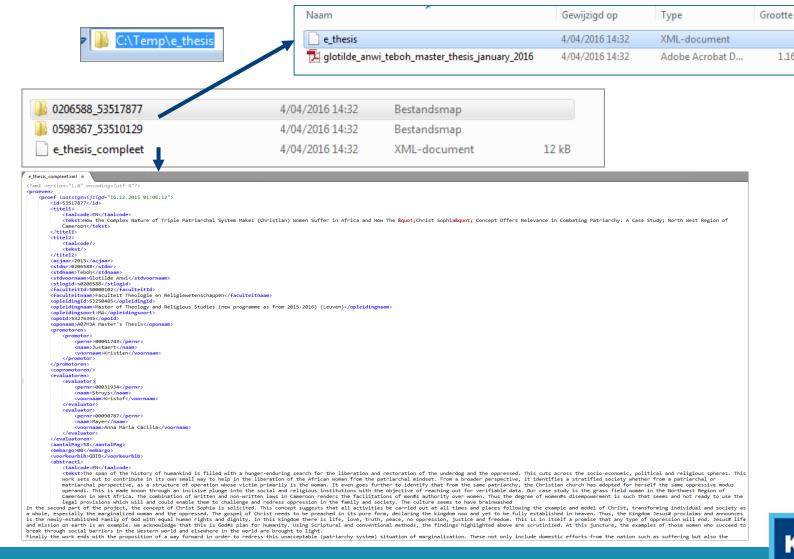
Download files and metadata YC363

 Application to download in bulk (or individual) files and metadata (YC363)





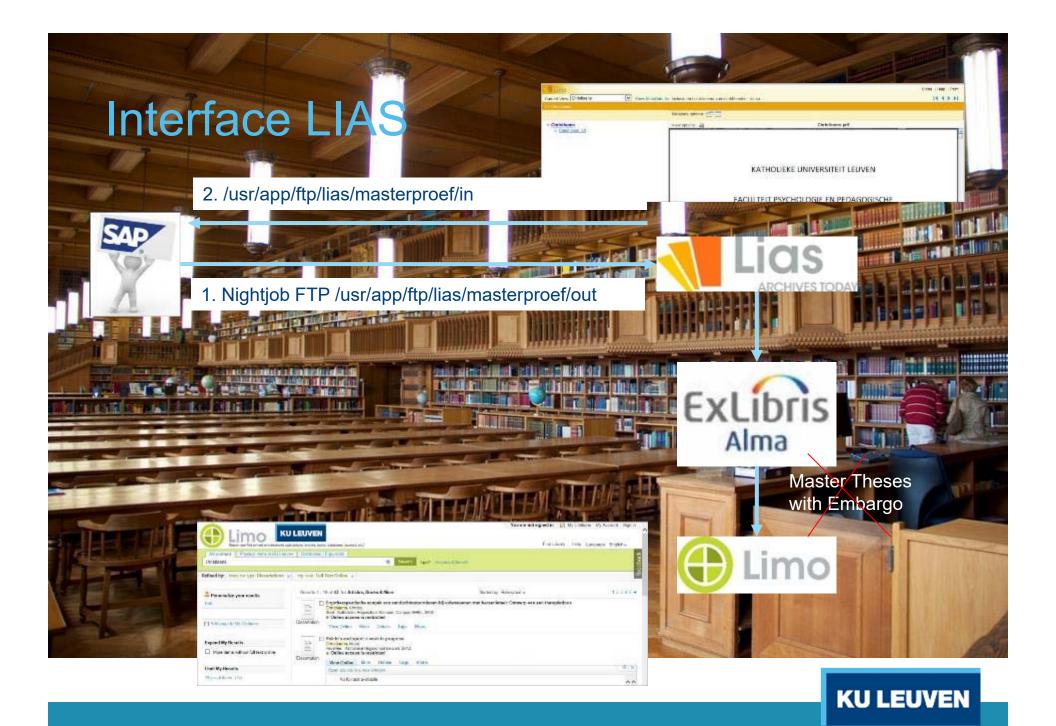
XML structure



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5 kB

1.162 kB



Situation in March 2016 after January exam period

Faculty	Uploaded Masterthesises
Faculteit Theologie en Religiewetenschappen	9
Institute of Philosophy	9
Faculty of Law	32
Faculty of Economics and Business (FEB)	84
Faculty of Social Sciences	47
Faculty of Arts	57
Faculty of Psychology and Educational Sciences	59
Faculty of Science	17
Faculty of Engineering Science	38
Faculty of Bioscience Engineering	7
Faculty of Engineering Technology	95
Faculty of Medicine	13
Faculty of Kinesiology and Rehabilitation Sciences	12
Total on 2/3/2016	479



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Project approach



Technical approach of the project

Timeline Phase 1 (1/3)

- Jan 2015: Kickoff meeting: defining the necessary people in the workgroup (ICTS, Library, General Process Coordination)
- Feb 2015: Project charter defines
 - "in" and "out" of scope: webapp, bulk download, LIAS
 - the budget: 50 mandays
 - project organisation: workgroup, adm dir+endusers
 - project progress reporting: reports in workgroup or via mail
 - risks: security, files
 - other products that will be used: LIAS, LIMO

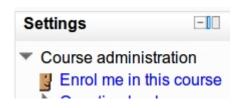


Technical approach of the project

Timeline Phase 1 (2/3)

- Mar 2015: Presenting BPMN (=Business Process Model and Notation) to workgroup
- Apr 2015: Presenting screen mockup and Odata model to workgroup
- June 2015: Demo workgroup







Oct 2015: Manuals for students, staff, LIAS interface



Technical approach of the project

Timeline Phase 1 (3/3)

- Nov 2015
 - Test Session 9/11/2015 (1 week) with selection of end users (student/staff)
 - Info session 25/11/2015 for all end users
 - o 26/11/2015: Go Live
- <u>Dec 2015</u>: support
- Jan 2016: workgroup meeting closing phase 1, starting phase 2



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Technical challenges



KU Leuven UI strategy for SAP

FOR WEB APPLICATIONS:

"Uncontrolled" environment

Student, teacher, external persons, etc..

Any device, any OS, any browser

Simple apps – user centric 1-1-3-principle

①

SAP UI5 & Gateway-services

"Controlled" environment

Central administration, faculty administration

Desktop, browser version can be enforced

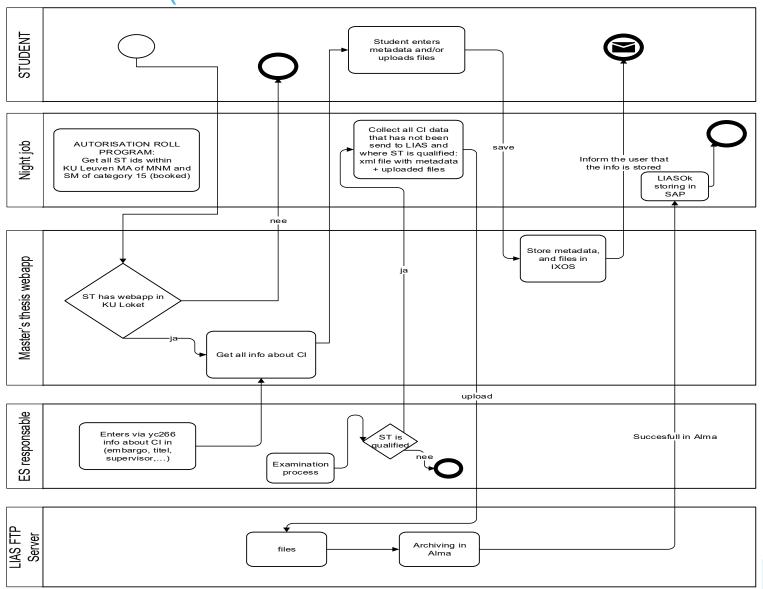
More complex applications, reporting, etc..

①

ABAP Webdynpro (via FPM)



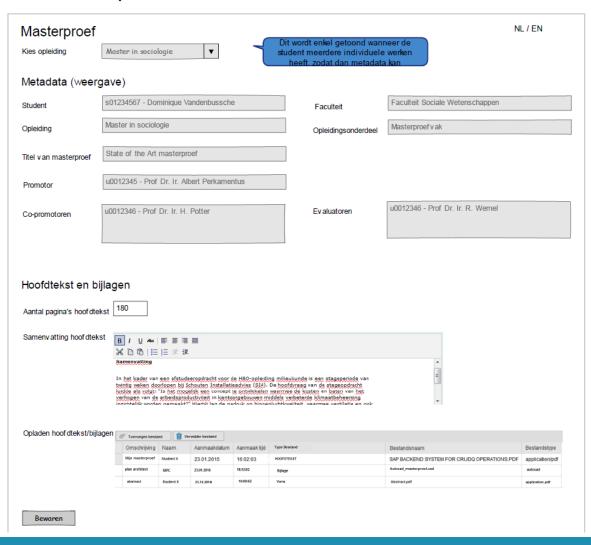
BPMN (=Business Process Model and Notation)



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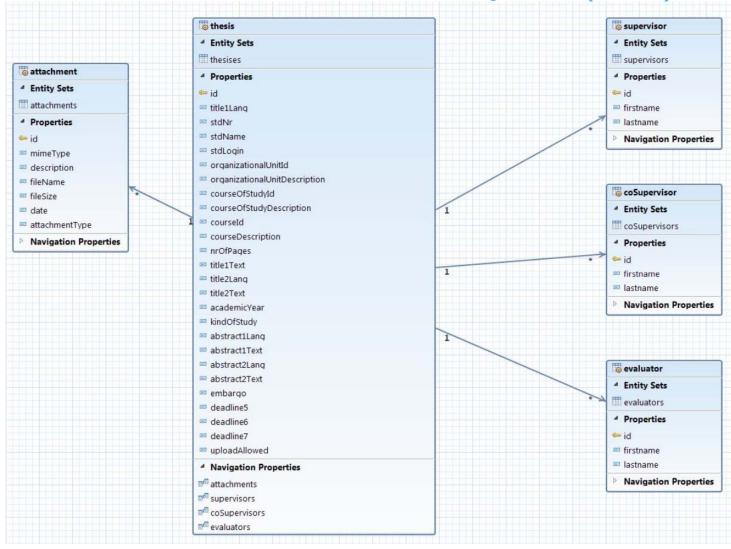
Screen mockup designed with Pencil

KU Loket - Masterproef





ODATA model – Eclipse (1/2)





ODATA model (2/2)

Eclipse model exported to EDMX and importing in Gateway Service Builder (TRX SEGW).

```
oft.com/ado/2007/06/edmx" xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" Version="1.0">

    - <edmx: DataServices m: DataServiceVersion="2.0">

                                              ioft.com/ado/2008/09/edm" xmlns:sap="http://www.sap.com/Protocols/SAPData" Namespace="ZC_CI_UPLOAD">
     <EntityType Name="thesis">
     < <Key>
         <PropertyRef Name="id" />
       <Property Name="id" Nullable="false" Type="Edm.String" />
       <Property Name="title1Lang" Type="Edm.String" /</pre>
       <Property Name="stdNr" Type="Edm.String" /</pre>
       <Property Name="stdName" Type="Edm.String"/3
<Property Name="stdLogin" Type="Edm.String" />
       <Property Name="organizationalUnitId" Type="Edm.String"/>
       <Property Name="organizationalUnitDescription" Type="Edm.String" />
<Property Name="courseOfStudyId" Type="Edm.String" />
       <Property Name="courseOfStudyDescription" Type="Edm.String" />
       <Property Name="courseId" Type="Edm.String";</pre>
       <Property Name="courseDescription" Type="Edm.String" />
       <Property Name="nrOfPages" Type="Edm.String"</pre>
       <Property Name="title1Text" Type="Edm.String"</pre>
       <Property Name="title2Lang" Type="Edm.String" /
<Property Name="title2Text" Type="Edm.String" />
       <Property Name="academicYear" Type="Edm.String"/>
       <Property Name="kindOfStudy" Type="Edm.String"/</pre>
       <Property Name="abstract1Lang" Type="Edm.String"</pre>
       <Property Name="abstract1Text" Type='Edm.String"</pre>
       <Property Name="abstract2Lang" Type="Edm.String</pre>
       <Property Name="abstract2Text" Type="Edm.String"</pre>
       <Property Name="embargo" Type="Edm.String",</pre>
       <Property Name="deadline5" Type="Edm.DateTime" />
<Property Name="deadline6" Type="Edm.DateTime" />
       <Property Name="deadline7" Type="Edm.DateTime"/>
       <Property Name="uploadAllowed" Type="Edm.Boolean" />
       <NavigationProperty FromRole="From thesis" Name="attachments" Relationship="ZC_CT_UPLOAD.thesisattachment" ToRole="To_attachment" />
       NavigationProperty FromRole="From_thesis" Name="supervisors" Relationship="ZC_CI_UPLOAD.thesissupervisor" ToRole="To_supervisor".
       <NavigationProperty FromRole="From_thesis" Name="coSupervisors" Relationship="ZC_CI_UPLOAD.thesiscoSupervisor" ToRole="To_coSupervisor" />
       <NavigationProperty FromRole="From_thesis" Name="evaluators" Relationship="ZC_CI_UPLOAD.thesisevaluator" ToRole="To_evaluator" />
      </EntityType>
     - <EntityType Name="attachment">
     - <Kev>
          <PropertyRef Name="id" />
       <Property Name='id" Nullable="false" Type="Edm.String" />
       <Property Name="mimeType" Type="Edm.String" /</pre>
       <Property Name="description" Type="Edm.String"</pre>
       <Property Name="fileName" Type="Edm.String"</pre>
       <Property Name="fileSize" Type="Edm.String"/
       <Property Name="date" Type="Edm.String"</pre>
       <Property Name="attachmentType" Type="Edm.String"/>
     </EntityType>
     <EntityType Name="supervisor">
     - <Key>
         <PropertyRef Name="id" />
       <Property Name="id" Nullable="false" Type="Edm.String" />
       <Property Name="firstname" Type="Edm.String" /</pre>
       <Property Name="lastname" Type="Edm.String"/>
     </EntityType>
```



XML generation: bulk download + LIAS

For the generation of the xml metadata file, XSLT is used.

```
<tt:value ref="$proef.ci_id"/>
                         <tt:value ref="$proef.st_nummer"/>
                          <stdnaam>
                                                  <tt:value ref="$proef.st_name"/>
                         <tt:value ref="$proef.st_name"/>
</stdnaam>
<stlogid>
<tt:value ref="$proef.st_logid"/>
</stlogid>
faculteitId>
</faculteitId>
</faculte
                          <faculteitnaam>
                         <!t:value ref="$proef.faculteitnaam"/>
</faculteitnaam>
<opleidingId>
<tt:value ref="$proef.sc_id"/>
</opleidingId>
                         <copromotoren>
                                                <tt:value ref="$proef.ci_copromotoren"/>
                          </copromotoren>
<evaluatoren>
</revaluatoren>
</evaluatoren>
</evaluatoren>
                          <aantalPag>
<ti:value ref="$proef.ci_aantal_pag"/>
</aantalPag>
                         <embargo>
    <tt:value ref="$proef.ci_embargo"/>
                         </embargo>
<abstract1>
                                                  <taalcode>
                                                                            <tt:value ref="$proef.ci_abstract1_taal"/>
                                                  </taalcode>
                                                                           <tt:value ref="$proef.ci_abstract1"/>
                                                   </tekst>
                          </abstract1>
                                                  <ttt:value ref="$proef.ci_abstract2_taal"/>
</taalcode>
                                                   </pr
                          </abstract2>
```



Lessons learned

Test Session 9/11/2015 with end users (student/staff) was

very helpfull

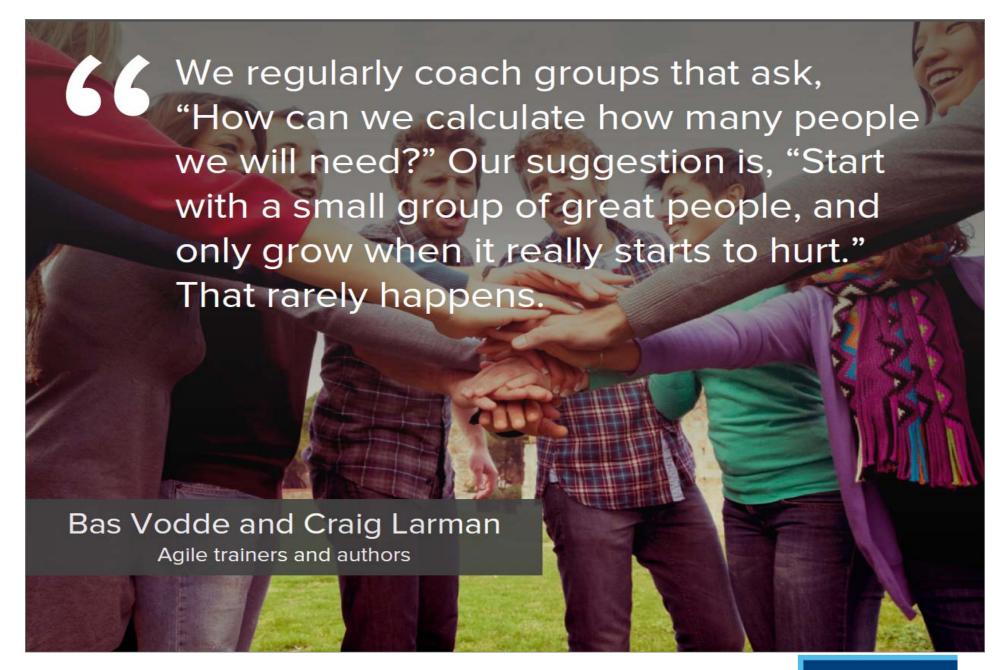






- Using the manuals (student/staff)
- Using prepared testscripts
- Using own test data and random user tests
- SAPUI5 missing components (rich text editor)





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Phase 2

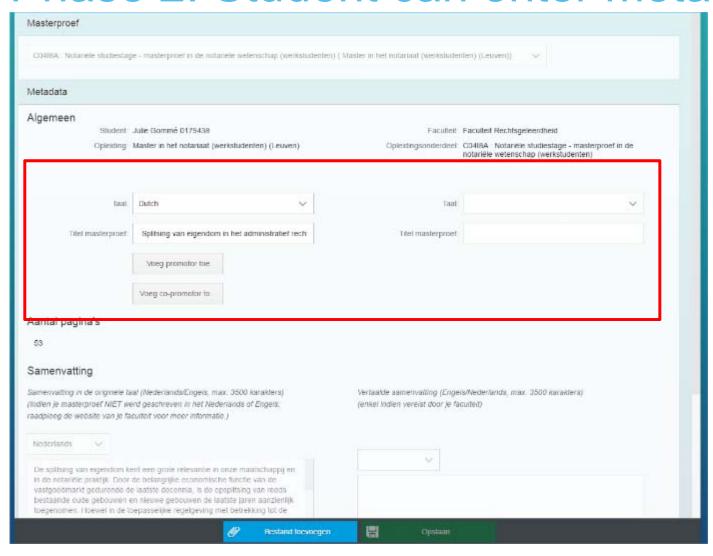


Phase 2 of the project

- Student can enter Title and Committee in webapplication
- Web application for supervisors and other evaluators in which the full texts are available
- Turnitin integration

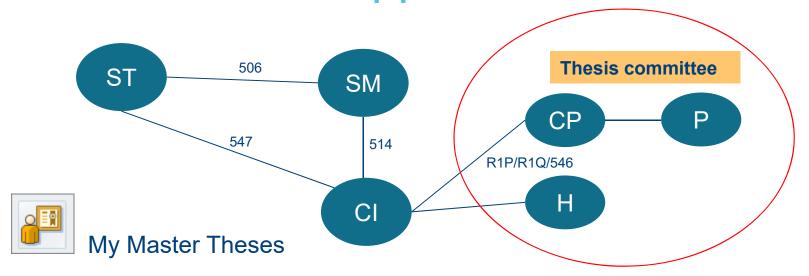


Phase 2: Student can enter metadata





Phase 2: Webapplication committee



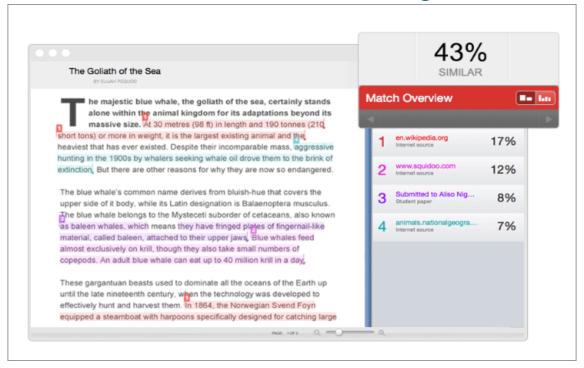
Name Student	Title thesis	Course	My rol
Jan Janssens	How the Complex Nature of Triple Patriarchal System Makes (Christian) Women Suffer in Africa and How The 'Christ Sophia' Concept Offers Relevance in Combating Patriarchy: A Case Study; North West Region of Cameroon	Master of Theology and Religious Studies	Promotor
Piet Peeters	Missionarissen in het bisdom Roermond. De bijdrage van het zelfverstaan van buitenlandse priesters aan de definitie van 'missie'.	Master of Theology and Religious Studies	Supervisor



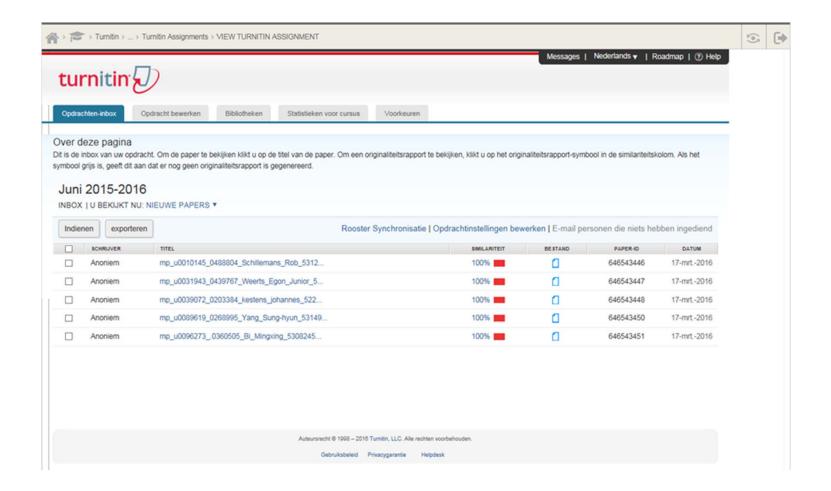


Phase 2:Turnitin integration

 Turnitin is the industry leading online service that highlights potential plagiarism by presenting easy-touse reports that show how much of a document is original, cited from other sources, or unoriginal.



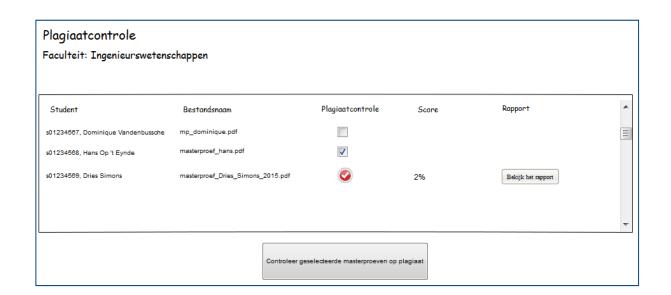






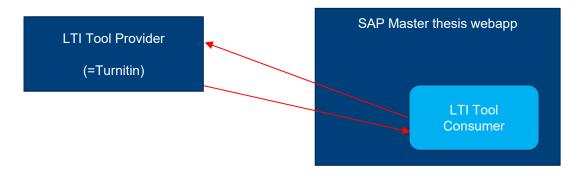
How would we like to see it?

→ Mockup for a new webapplication for plagiarism staff





- Turnitin requires that custom webapps integrate via LTI (=IMS <u>Learning Tools Interoperability</u>) and are certified.
- Redirected to Turnitin pages



Turnitin flow = Student → Supervisor → feedback student



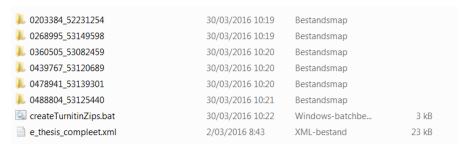
Drawbacks:

- Student has uploaded the Master's thesis into SAP, not in Turnitin (different versions?)
- Lack of webservices to upload master thesis to Turnitin and receive score and report document.
- LTI certification
- No bulk upload possible (simulating student?)
- → For now, we use Blackboard building block in semi automated way.



Semi automated way?

1°) Via yc363 download of the master's theses.



2°) Execute createTurnitinZips.bat

This creates Turnitin directory that contains zip files according to Turnitin specifications:

- 1 master's thesis is max 40 MB
- max 1000 files per zipfile
- 1 zipfile is max 200 MB
- 3°) Upload the zipfiles into corresponding BlackBoard assignments

Q & A

