Human Language Technology

Center for Content Extraction

Content Extraction Analytics
SIGDEV *End-to-End* Demo

[redacted]

21 May 2009

Introduction to Content Extraction

- New technologies can find Essential Elements of Information in documents
- The Center for Content Extraction provides "one stop shopping" for these technologies at NSA

Extraction can benefit SIGDEV from end to end

- Selection
- Translation & Transliteration
- Analysis
- Interpretation/Enrichment
- Retrieval
- Storage & Distribution

STAIRS Partners

S (Marina, CEA)

T (Cybertrans)

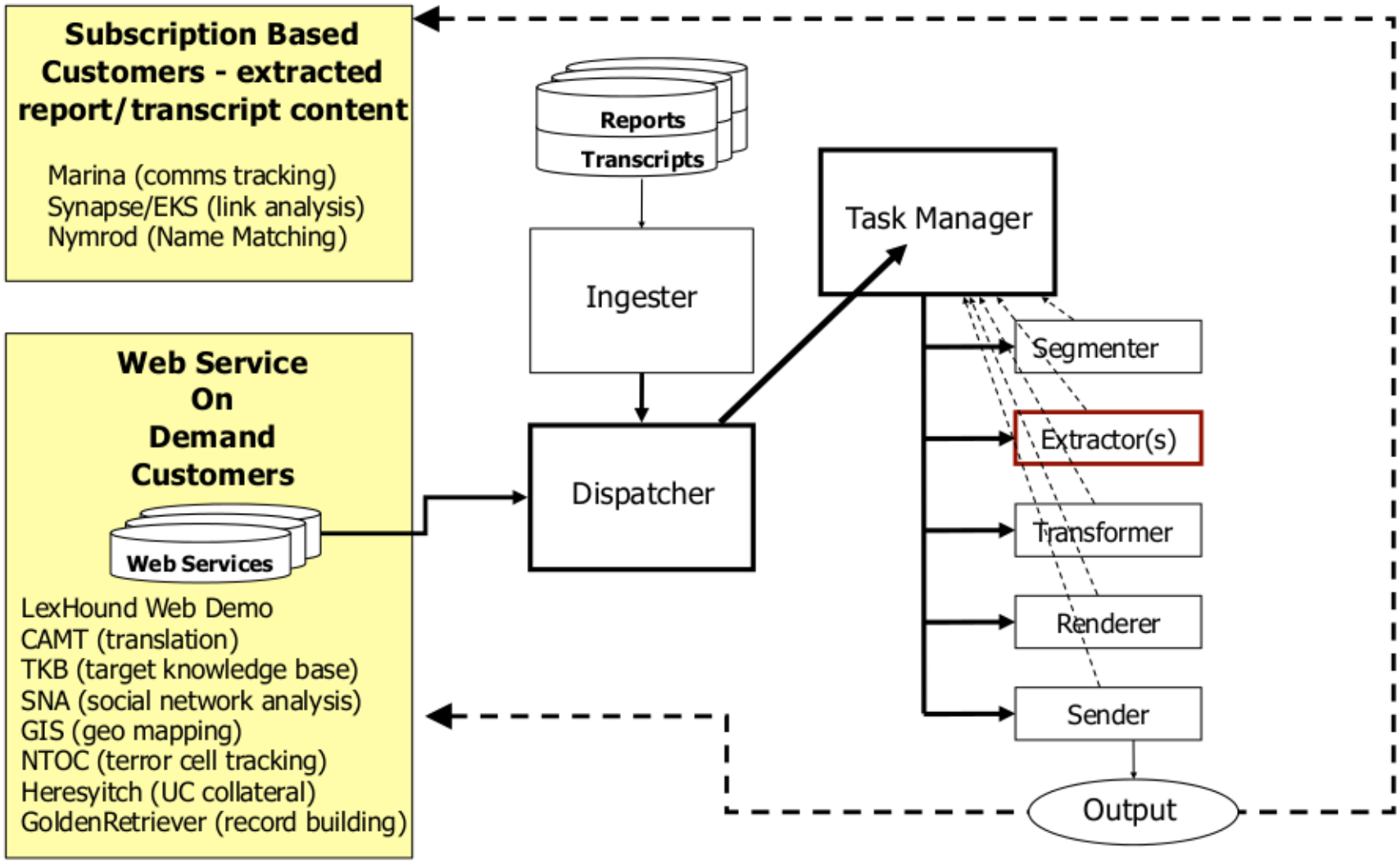
A (SNA/Paintball, Synapse)

I (Nymrod,Thundercloud)

R (Journeyman/CPE)

S (GoldenRetriever, SocioPath)

Implementation: CCE Extraction Architecture (LexHound)



Elaboration: *The Central Importance of Storage*

- Each of the STAIRS Steps exploits stored information
  - Selection Dictionaries ("get it")
  - Linguistic Glossaries for Translation
  - Wikis etc for enrichment ("know it")
- Manual record-formation is slow, prone to omissions and inconsistencies
  - <200K Person Targets in TKB
  - Growth ~= 20K/year
- Automatic extraction accelerates storage
  - >3000K Citation Records in ***Nymrod*** Entity DB
  - Growth ~= 1000K/year

Machine vs. Manual Chief-of-State Citations

	Nymrod (machine-extracted) Citations				**Last TKB Manual Update**
	Name	**Role**	**Code**	**Cites**	
1	Abdullah Badawi	Malaysian Prime Minister	COS	> 100	10/15/2007
2	Abdullahi Yusuf	Somali President	COS	> 300	N/A
3	Abu Mazin	(Mahmud 'Abbas) PA President	COS	> 200	5/20/2009
4	Alan Garcia	Peruvian President	COS	> 100	N/A
5	Aleksandr Lukashenko	Belarusian President	COS	> 50	N/A
6	Alvaro Colom	Guatemalan President	COS	> 200	N/A
7	Alvaro Uribe	Colombian President	COS	> 700	N/A
8	Amadou Toumani Toure	Malian President	COS	> 50	N/A
9	Angela Merkel	German Chancellor	COS	> 300	N/A
10	Bashar al-Asad	Syrian President	COS	> 800	N/A
...	.....	.....	...		
122	Yuliya Tymoshenko	Ukrainian Prime	COS	> 200	N/A

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