What Can Language Technology do for IR?

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Industry Day

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Bitext - Applied Language Technologies

- Before Bitext – Since late 80's
  - IBM, WorPerfect, Novell
  - LTI - Carnegie Mellon University

  - Information Retrieval
  - Grammar checking
  - Assisted Translation

- Early Bitext - EU funded projects - IST
  - LIQUID, ALLES, TT2

- Bitext – Developer of complementary products
  - NaturalFinder + Search Engines

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What Language Technology DOES for IR

- Nothing
  - Query side
    - *"Special offers for…"*
    - 53 70 65 63 69 61 6C 20 6F 66 66 65 72 73
  - Index
    - 53 70 65 63 69 61 6C
    - 6F 66 66 65 72 73
- or almost nothing as we'll see…

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What Language Technology COULD DO for IR

- Everything - Search is a language problem!
  - Query side
    - *"Special offers for MP3 players"*
    - *offers*, POS:noun, NUM:plural… SYN: bargain
  - Index
    - *special*, adj…
    - *offers*, noun…
    - …NOUN PHRASE
- but it is not happenning! Or it is?

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What Language Technology IS DOING for IR

- Actually, there is something
  - Spelling – Live, Google, Yahoo – Not Amazon!
    - Avoids silence
  - Stemming – Live, Google
    - Increases recall
  - Natural language interface – Hakia, Powerset
- And probably, there's more coming
- (Debate: Symbolic vs. Statistical Techniques)

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What Bitext is offering for Search Engines

- As much as linguistic technology can do
  - One integrated NLP suite: DataSuite
    - Spelling – DataSpell
    - Stemming – DataLexica
    - Semantics – DataNet
    - Morph-syntactic processing - DataGrammar
  - Packed solutions for specific applications:
    - NaturalFinder, for search engines
  - For Spanish, English, Basque, Catalan…

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NaturalFinder, add-on for any search engine

- NaturalFinder, functionality
  - Natural Language Interface
    "Italian painters that lived in Spain"
    - Better user experience
    - No keywordese, no two-word queries, no booleans
  - Linguistic Knowledge – Transparent for the user
    - Better results
    - Better ranking (recall & precision)

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NaturalFinder, add-on for any search engine

- NaturalFinder, technology
  - Integrates in a non-intrusive way
    - string-based interface –API
    - in any platform -Windows, Linux/UNIX
  - Already integrated with
    - Google Search Appliance
    - dtSearch
    - Memex
    - Microsoft SharePoint
    - Oracle Secure Enterpise Search…

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NaturalFinder, add-on for any search engine

- NaturalFinder + Live
  - Architecture
    - Live: Docs, Index, Search Engine
    - NaturalFinder: User Interface
  - Limitations
    - Under development
    - Query length
    - Case and accent sensitivity
    - Operator nesting – NOT
  - Thanks to Microsoft!

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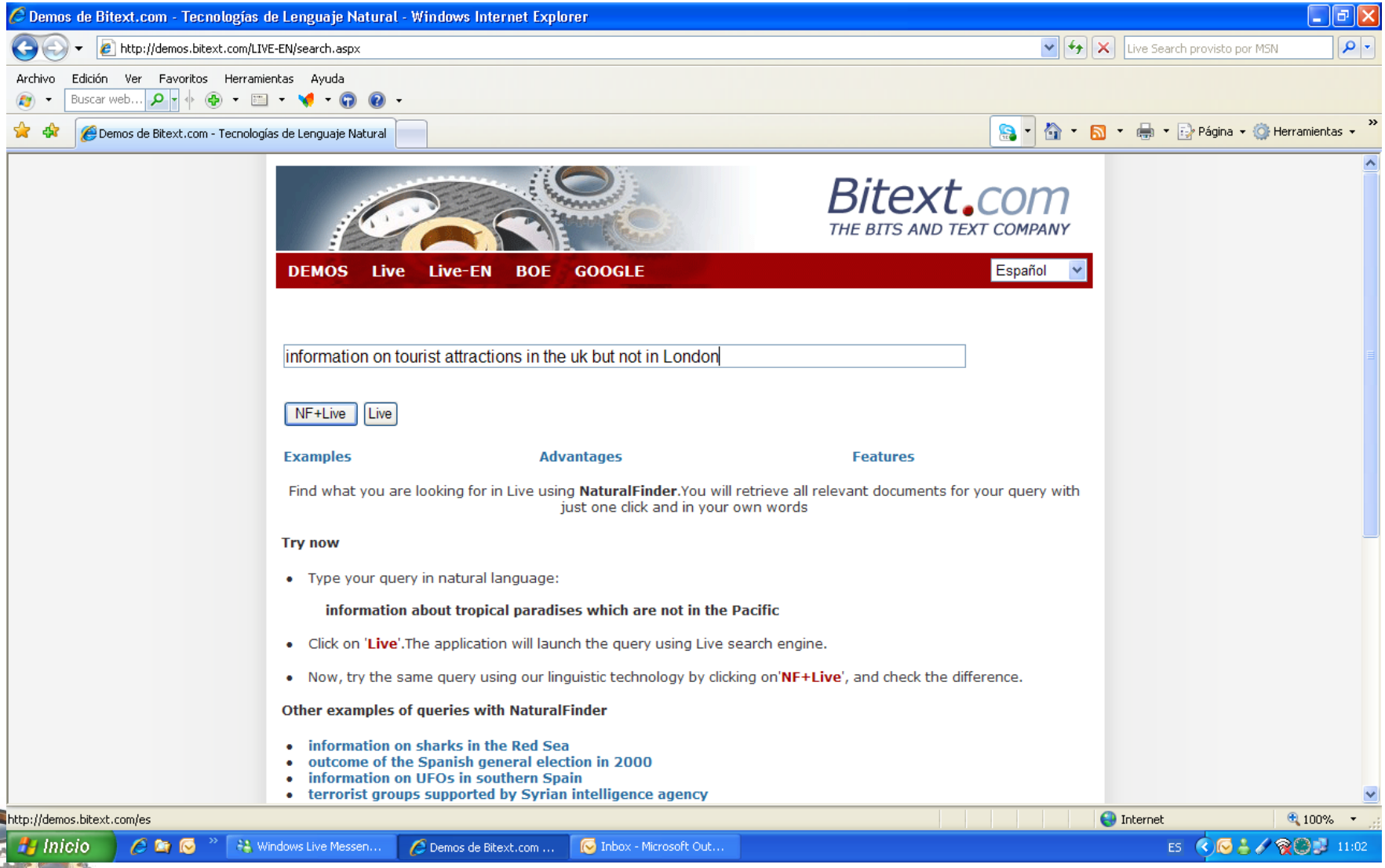

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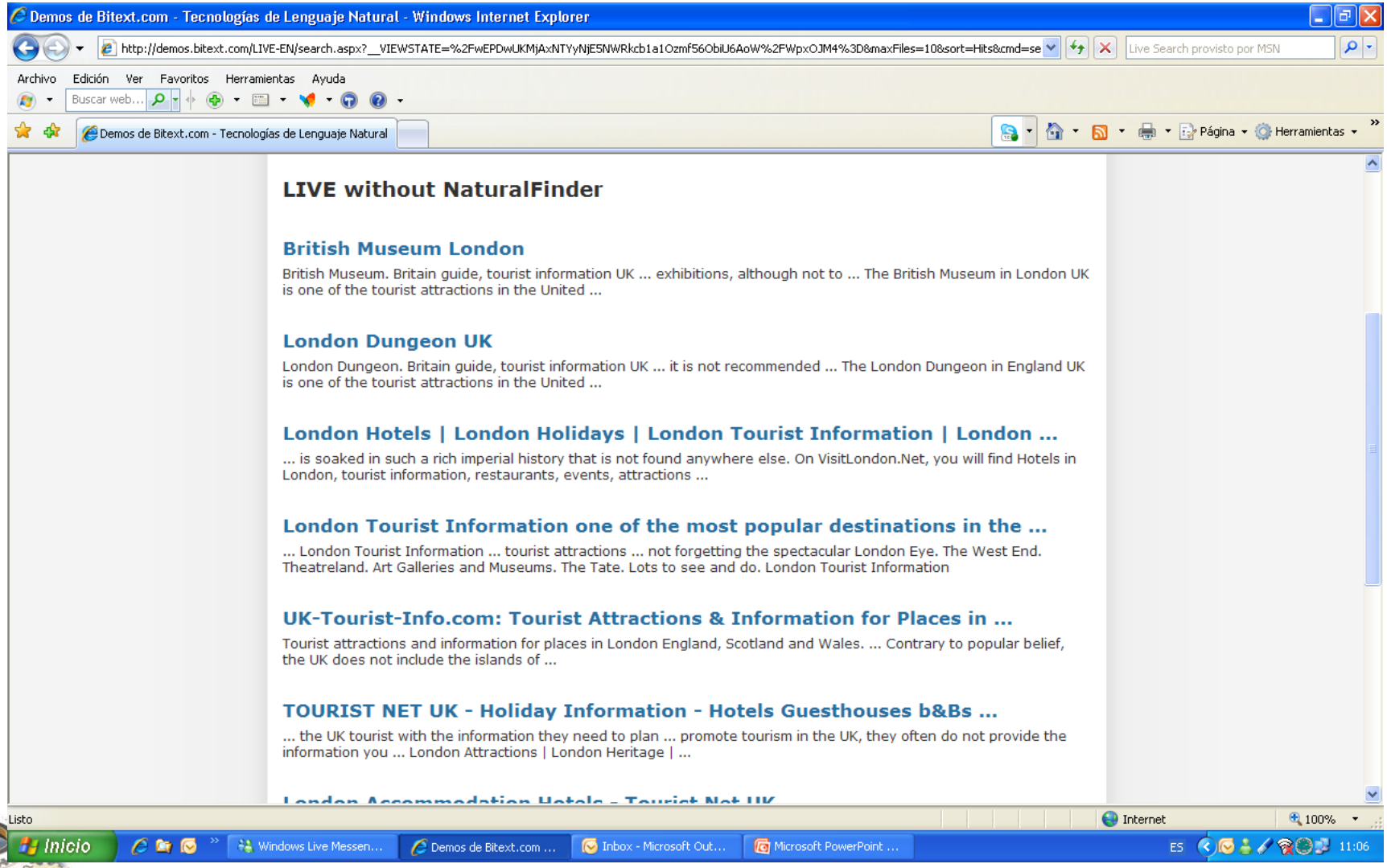

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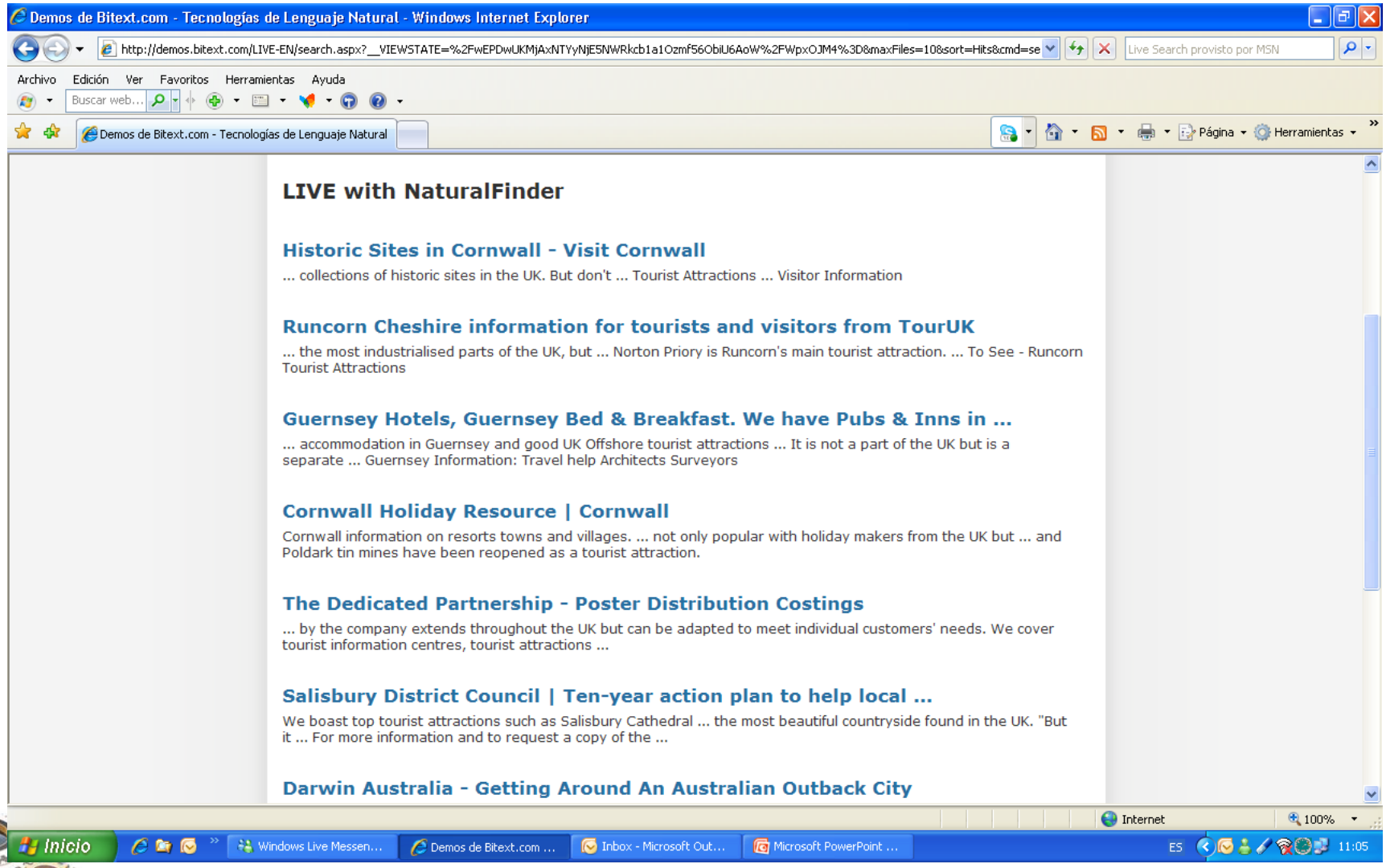

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What Bitext is offering for Search

- Other packed solutions for search oriented environments
  - Geographic Information Systems
    - NaturalGIS
  - Customer Relationship Mgmt
    - NaturalAssistant
  - Databases
    - NaturalSQL
  - No-index - Regular expressions

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What Bitext is offering for Search

- Pre-production Research
  - Named entity recognition with attributes
    “ACME Vice-President John Doe”
  - Text categorization
    open-closed categories
    known-unknown categories
    single and multiple categories
    paragraph and document level

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What Bitext is offering for Search

- Basic-Research
  - We are looking for a partner to develop new ways of indexing that include linguistic knowledge
  - After document metadata we need Word metadata

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Thanks!

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