Help Yourself: A Virtual Self-Assist System
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Introduction
• Contact center business represents a significant opportunity
  • Estimated $600B business world wide
• Highly labor intensive
  • $300B will be spent in labor in 2014
• Self Assist Systems
  • Create systems that can solve customer problems in an automated manner
  • Existing systems – simple transactional
  • What is my bill account
  • Book tickets from London to New York on April
  • Syntactically Rigid
  • Book tickets from London to New York on April $300B will be spent in labor in 2014
  • Highly labor intensive
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Knowledge Article
Learn how to transfer contacts from a Blackberry device to a phone
Last Updated: Nov 18, 2013
Back Up Contacts
• If the contact in the Blackberry device are already synchronized to Google or a Microsoft Exchange account they can be synchronized directly to the phone. You do not need to worry about exporting them from the Blackberry device.

Root the On-device Contacts
1. Ensure you have installed BlackBerry Desktop software on the PC. The latest version can be downloaded from the BlackBerry web site
2. Connect your Blackberry device to the PC via the cable
3. In BlackBerry Desktop Software, click on device name on the left
4. Follow the instructions to synchronize your contacts to the PC

Step 1 – Export your contacts
5. In BlackBerry Desktop Software, click on device name on the left
6. If a warning message is displayed to turn off wireless email, follow these steps to turn off the device email service
7. From BlackBerry, click on your email
8. From BlackBerry, click on the email
9. Change the BlackBerry Sync Email Mailbox to (or clear the option) to synchronize the exchange account
10. Click on Blackberry Sync Email Mailbox to (or clear the option) to synchronize the exchange account

Step 2 – Import your contacts
11. On the PC, import the contacts
12. When prompted to select, select the contacts
13. The contacts will be imported to the Blackberry device

Synchronize Contacts with Google or Exchange Account
1. On the PC, open Contacts
2. Tap Address Book

Intent Graph
A document may have several topics or objectives of user interest
• Each such topic is defined as an Intent
  • E.g. The doc. “Learn to transfer user contacts from Blackberry to iPhone” may have the intents: import contacts, export contacts, back up contacts, synchronize contacts
  • Each intent may have multiple methods to satisfy the intent
  • E.g. The intent “software upgradation” has 2 possible methods: Automatic and manual upgrad.

A method consists of a sequence of steps
• E.g. method for the basic intent “export on-device contacts” has a sequence of 18 ordered steps
  • Each logical unit in any method is a step
  • Steps are connected by operators

Steps for a method and methods for an intent may be connected by the following operators:
• All – representing an unordered sequence of steps
• Or – denoting that either of the steps may be performed on the method
• Next – representing an ordered sequence of steps

Intra-document discourse linkages are based on discourse markers (like previous, before, following etc.) to preserve sequence of information
• E.g. steps to “import contacts” refer to “above steps” in the doc. to “export on-device contacts”

A basic intent tree for an article consists of basic intents, methods, steps and operators

Multiple basic intent trees across different articles form an intent graph, where basic intents (or methods) are connected by co-referent concept linkages.

Features for Intent Graph Extraction
• Discourse Coherence
  • Sentences connected by co-ordinating conjunctions like as, follows etc., subordinating conjunctions like before, etc., adjectives like next, previous etc. and adverbs like following, furthermore etc. are considered part of the same intent section
• Paragraph and Section Break
  • Indicate discontinuity in current intent section

Document Stylistic Markers
• Font and header sizes, bold and strong font patterns etc. are used to identify basic intents

Context Change
• Detected by domain keyword overlap

Lexical Chain
• Sequence of related words in the text, spanning short or long distances
• Independent of the grammatical structure and captures the cohesive structure of the text

A basic intent segment contains domain keywords part of the same lexical chain

Intent Graph Traversal
• The system monitors the user response which can be classified as:
  • Continue indicating the user is following the instructions
  • Issue detecting the user is facing difficulty with the instructions
  • Response Classification
  • Fall back on search engine if not in graph
  • Switch indicating a context switch in user query detected by keyword overlap between system and user response, response type from user etc.
  • Abort detecting the user is angry or frustrated (probably due to punts from the system)

Dialog System Modules
• System maintains intent graph in memory and stores graph and user response states in stack
• It matches user query to a basic intent in graph and extracts methods for the intent from graph
• In case of ambiguity it frames a question
• It displays steps (methods) for method (intent) according to the operator connecting them
• After each instruction, the system waits for user response to monitor progress

• It follows intra-tree discourse linkages and intra-tree concept linkages to display methods and steps according to user query