

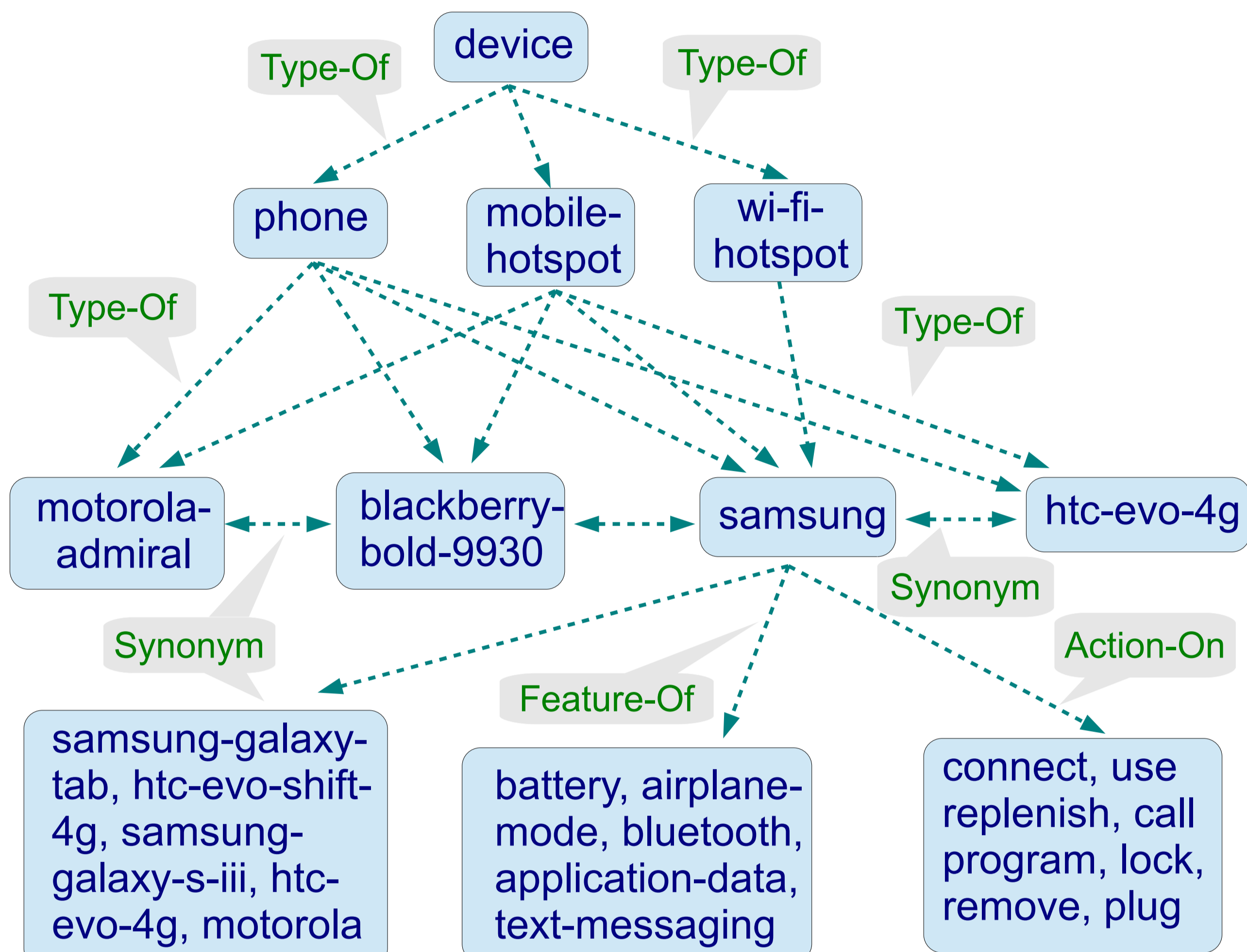
# Unsupervised Approach for Shallow Domain Ontology Construction

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## 1. MOTIVATION

- Domain Ontology incorporates domain awareness in an IR system in the form of domain-specific concepts and relations
- We propose a framework for its automatic creation without *any* form of supervision or manual annotation
- It improves performance of an existing Question-Answering system by **7%**, as it becomes aware of the domain
- This shallow domain ontology focuses on 4 primary relations : *Synonym*, *Type-Of*, *Feature-Of* and *Action-On*

## 2. SMARTPHONE DOMAIN ONTOLOGY



## 4. EVALUATION RESULTS

- 5000 articles from smartphone domain, 2000 manually annotated word-pairs
- WordNet could only discover **1** word-pair for Feature-Of and **74** word-pairs for Type-O.
- WordNet does *not* contain any Action-On reln. Type
- 18%** recall improvement over WordNet

Relation	Our Approach	
	Precision	Recall
Feature-Of	74.9%	85.7%
Action-On	63.88%	68%
Type-Of	57%	77%

WordNet Measures	F-Score Synonyms
LCH	0.22
RES	0.31
JCN	0.42
PATH	0.42
LIN	0.43
WUP	0.43
LESK	0.45
Our Approach	0.49

## 3. SYSTEM FRAMEWORK

