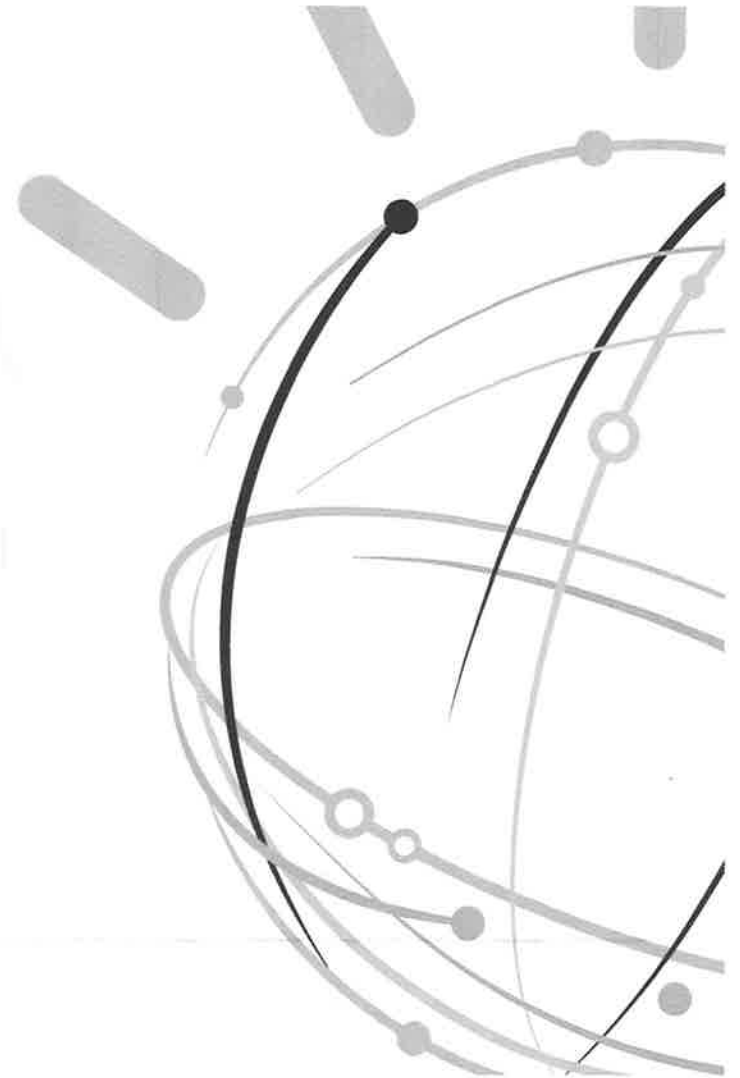


IBM Watson Health

Evolving Watson Health's Approach to NLP

Project Josephine



IBM Watson Health

Current approaches to NLP limit cognitive potential

- **Insufficient Accuracy:** Clients report attributes found with NLP are often incorrect or missed, preventing sales
- **Lack of Standardization:** NLP developed by one team cannot be used by another and offerings addressing complementary steps in clinical workflow cannot be integrated
- **Significant Overlap:** 25% of developers across 12 projects are independently developing the same NLP

Project Josephine addresses NLP quality, while Tiger Team centralizes NLP across Watson Health

- **Project Josephine**
 - **Improve Accuracy:** Connect clinical expertise to development and enable machine learning approaches
 - **Standardize Terminology:** Allow reuse of NLP and integration across projects to drive sales
 - **Reduce Overlap:** 40% of NLP resources can be deployed to solve new problems
 - **Tiger Team**
 - **Explore NLP centralization:** NLP is too big and too complex for individual teams to address in isolation
-

Four projects define cancer four different ways

Example: **Chronic Myelogenous Leukemia BCR-ABL1 Positive in Remission**

Project	Concept Type
MDA - OEA	<ul style="list-style-type: none"> • Whole span as Disease_Type
Watson Drug Discovery	<ul style="list-style-type: none"> • Chronic Myelogenous Leukemia as Disease_Type • BCR and ABL1 as Proteins
Watson for Genomics	<ul style="list-style-type: none"> • Myelogenous Leukemia as Hematologic_Disease • Chronic as Temporal_Concept • BCR as Gene • ABL1 as Gene
Medical Sieve	<ul style="list-style-type: none"> • Leukemia as Lymphoid_Cell_Neoplasm • BCR-ABL1 Positive as Disease_Subtype

Across Watson Health 90% of the same NLP tools are built independently between 4 to 12 times

Offering Name	Disease / Diagnosis	Finding	Symptom	Drug	Gene / Protein	Variant	Metric	Units	Lab	Anatomy	NLP Developers (per project)
Watson for Drug Discovery	★	★	★	★	★	★					7
EMR Cognitive Services	★	★	★	★	★	★	★	★	★	★	9
Watson for CTM	★	★	★	★			★	★	★	★	11
Watson for Oncology	★	★	★	★			★	★	★	★	11
Watson for Genomics	★	★			★	★					6
Watson for Patient Safety	★	★		★							6
Clinical Summary	★	★	★	★			★	★	★	★	6
Clinical Discrepancy Services	★	★	★	★			★	★	★	★	11
Real World Evidence	★	★		★							9
MD Anderson OEA	★	★	★	★	★	★	★	★			7
Gemstone	★	★	★	★							6
Explorys	★	★	★	★	★		★	★	★	★	8

Project Josephine will focus on improving NLP quality, leading the way for NLP evolution across Watson Health

