



# Differential Diagnosis Engine: The Right Dose for Improved Clinical Decisions

## The Client

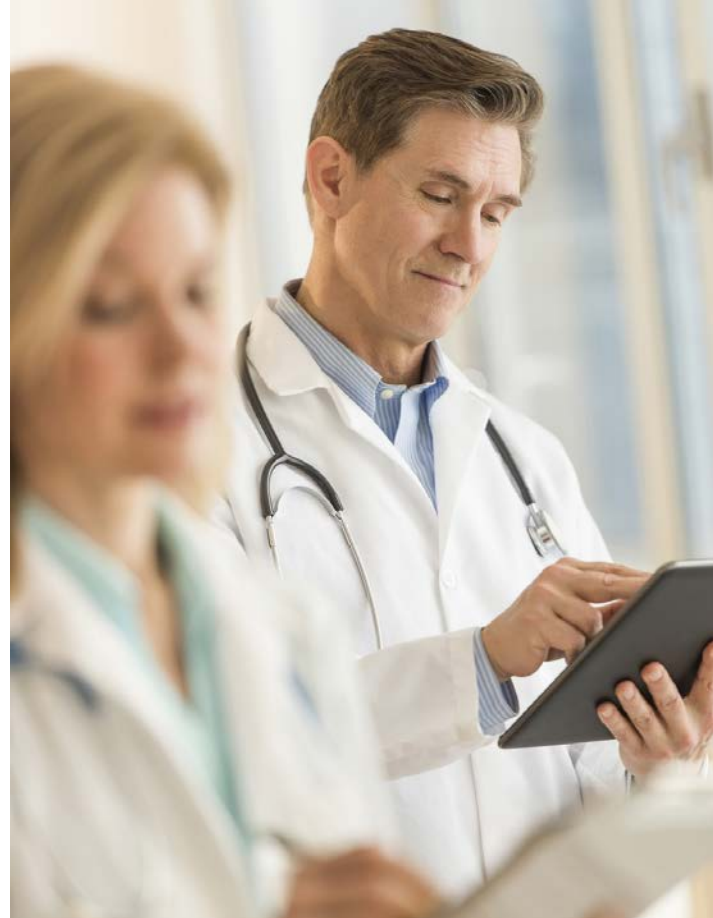
A niche medical technology provider

## Business Challenge

The client wanted us to design and develop a symptom checker web application that could recursively and algorithmically generate differential diagnosis, and improve clinical decision-making.

The requirements were:

- A natural language processing system that could convert the verbal description of symptoms into a systematically coded list of symptoms termed as chief complaints.
- The client also needed a differential diagnosis engine that took type, acuity of the symptom and demographics of the chief complaint of the patient into account and generated a list of differential diagnosis.



## Beyond possible

The solution improved context-specificity and sensitivity. It could also be used in a telemedicine scenario – the call handler could take a decision on which specific doctor the call could be forwarded to.



## Technosoft's Solution

Technosoft's team built a solution that used natural language processing, identified keywords and findings, and mapped various categories, including the acuity of the symptom and demographics of the patient, and generated a list of differential diagnosis.

## Business Benefits

- Improved productivity and efficiency among members of the medical community
- Enabled non-medical people to take an initial decision on factors such as criticality of the patient and the specialization the patient should be directed to
- Brought about minimization of misdiagnosis and errors in judgement was reduced
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- Enabled faster time for intervention and treatment

## Tools & Technology

- R for NLP and statistical analysis
- SAS for NHAMCS data manipulation
- Microsoft Access
- HTML 5, Tableau

Machine-learning approaches/  
algorithms applied:

- Association Mining
- Text Mining

## About Technosoft

Technosoft Corp. (Technosoft) combines strategy, technology and creativity to help companies accelerate their digital transformation journeys. We help our customers gain insights from data that others can't see and we provide bold ideas for innovation. Technosoft offers solutions for digital transformation, data science, robotic process automation, artificial intelligence, Blockchain, cloud computing, application lifecycle management, quality assurance and testing, CRM-ERP (Salesforce, SAP, Oracle), and IT infrastructure management. Technosoft has extensive domain knowledge of the banking and financial services, healthcare, manufacturing, retail, and high tech industries. Headquartered in Southfield, Michigan, Technosoft has 4,400+ global employees and is trusted by more than 35+ Fortune 1000 customers in North America and India. Learn more at [www.technosoftcorp.com](http://www.technosoftcorp.com)

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