Çok Yakın Geleceğe Göz Atmak

Burcak Soydan,
BT Altyapı ve Dışkaynak Hizmetleri, Ülke Müdürü
IBM Türk

Some companies survive longer than others

IBM is operating since 1911
in Turkey since 1938

IBM's secret for survival is to move out of its comfort zone

1911

IBM founded

1945

First corporate pure research lab

1948

SSEC: the first computer

1957

FORTRAN: The leading computing language

1961

IBM's legendary typing machines

1969

First man on the moon with the help of IBM

1970

Relational Database, the root of databases

1981

IBM PC: Computer became part of daily live

1990

Moving Atoms: The beginning of nanotechnology

1997

IBM Business Consulting

2011

Watson: A new era of computing

2014

Applying Watson's Advanced Analytics to Genomic Treatment Options for Brain Cancer Patients

We transformed our Research Division for the new era

1/3 of IBM Research's spending
is now focused on data, analytics and cognitive computing

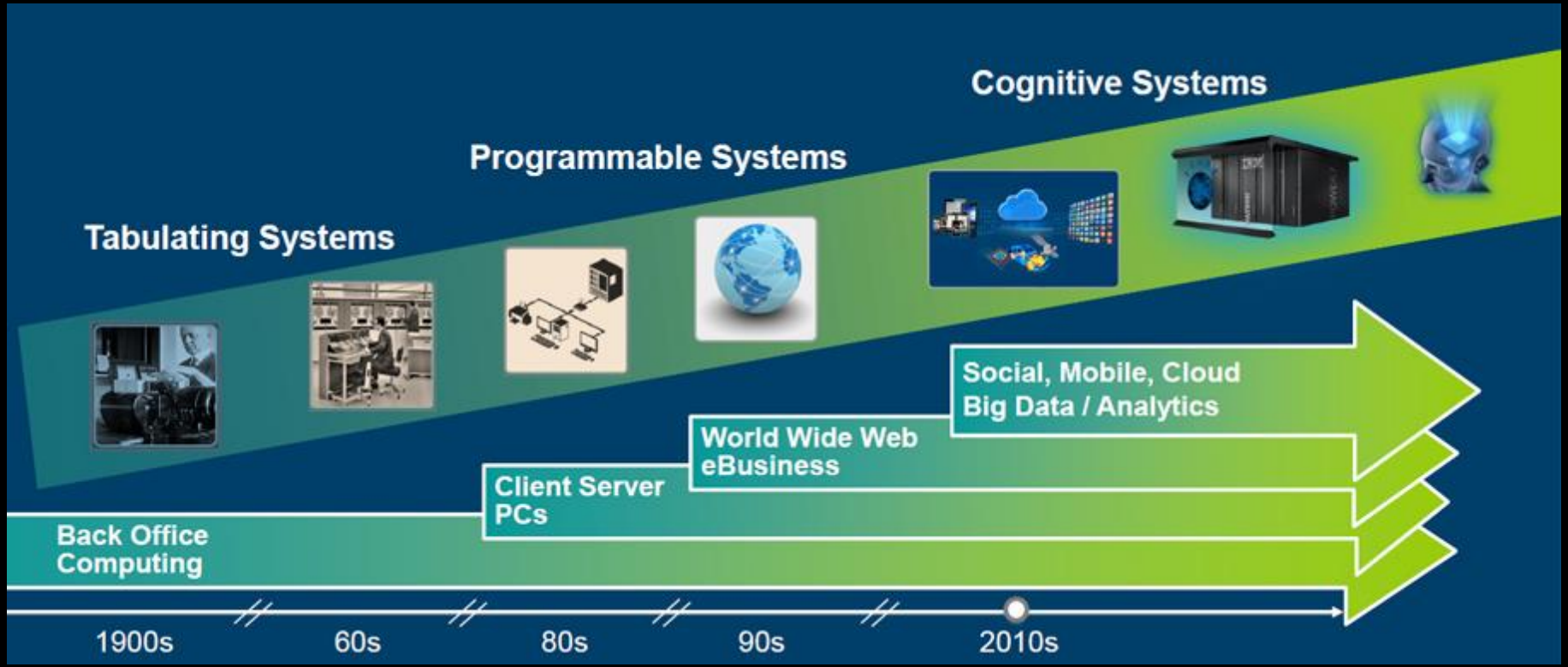
$6 B investment **each year on IBM Research**

22 consecutive years **of patent leadership,**
with 7.534 patents only in 2014

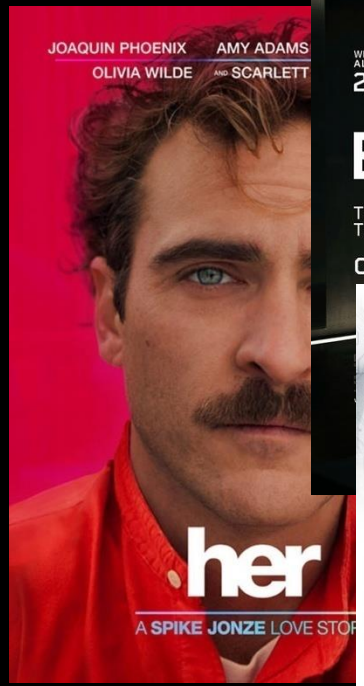
13 Global R&D Labs

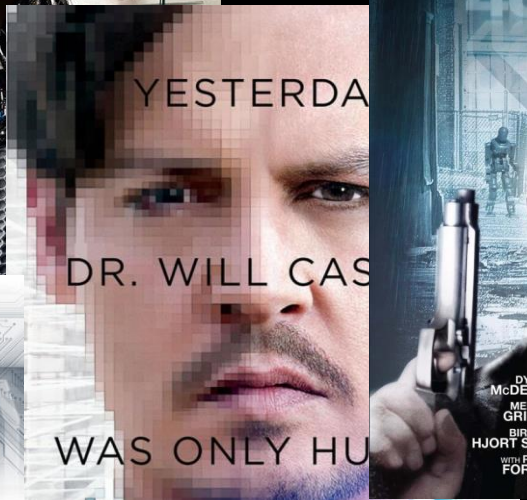
5 Nobel Prizes

We are leading to *a new era of computing*



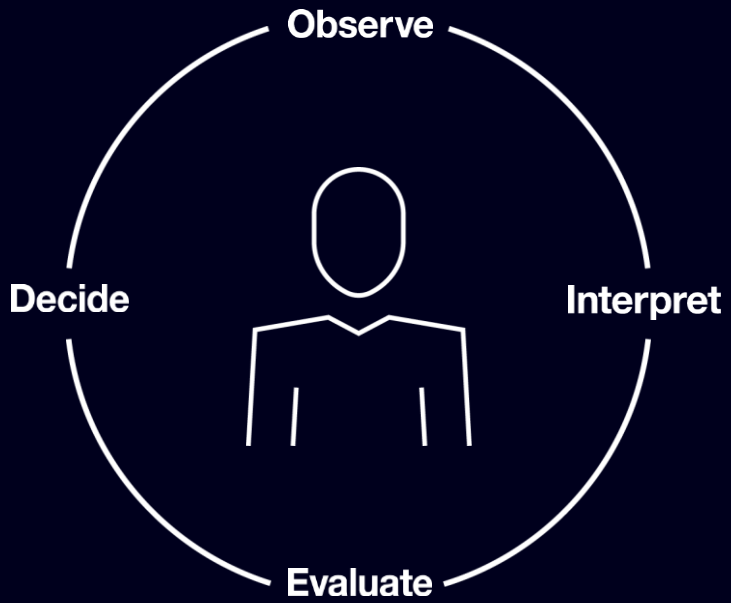
Cognitive Systems in Hollywood



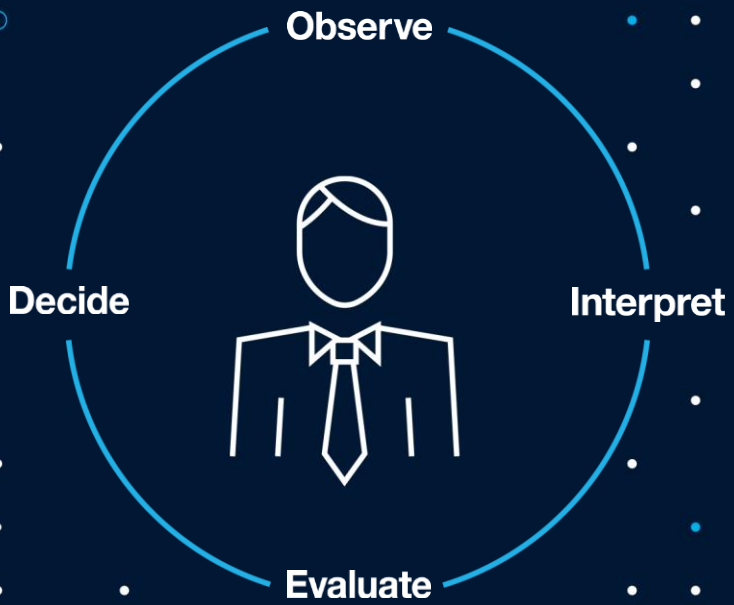


Watson in Jeopardy!

This is how cognition works.

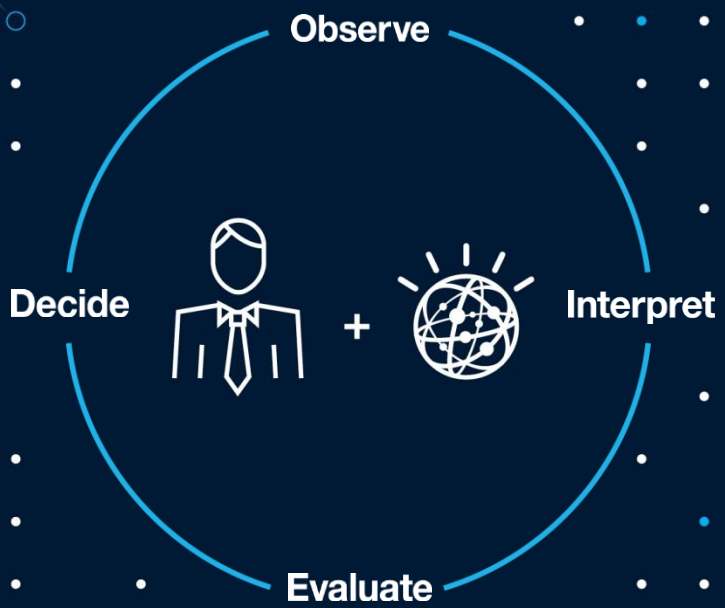


The making of an expert.



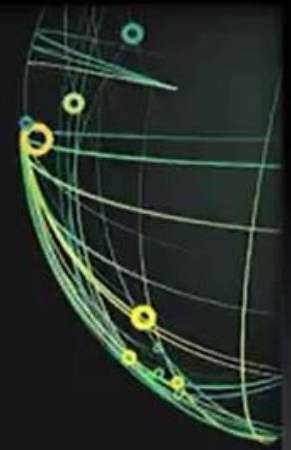
But even experts face challenges in our current environment.

Watson scales expertise to expand what's possible.



Putting IBM Watson to Work in Healthcare:

IBM Watson Oncology Treatment Advisor



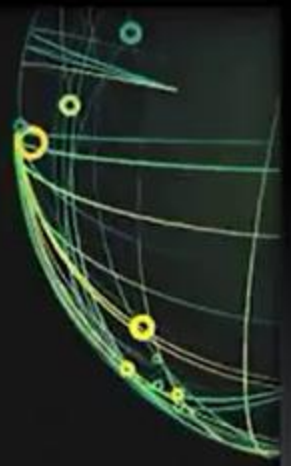
IBM WATSON

Memorial Sloan-Kettering Cancer Center

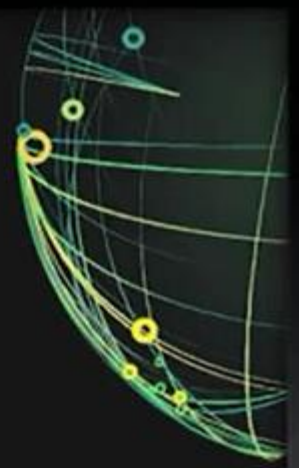
Lin J. Yamato
Gender: Female
DOB: January 15, 1975 (37)
Place of Birth: Osaka, Japan

Current Condition

DX: Lung Adenocarcinoma
Smoking History: Never smoker



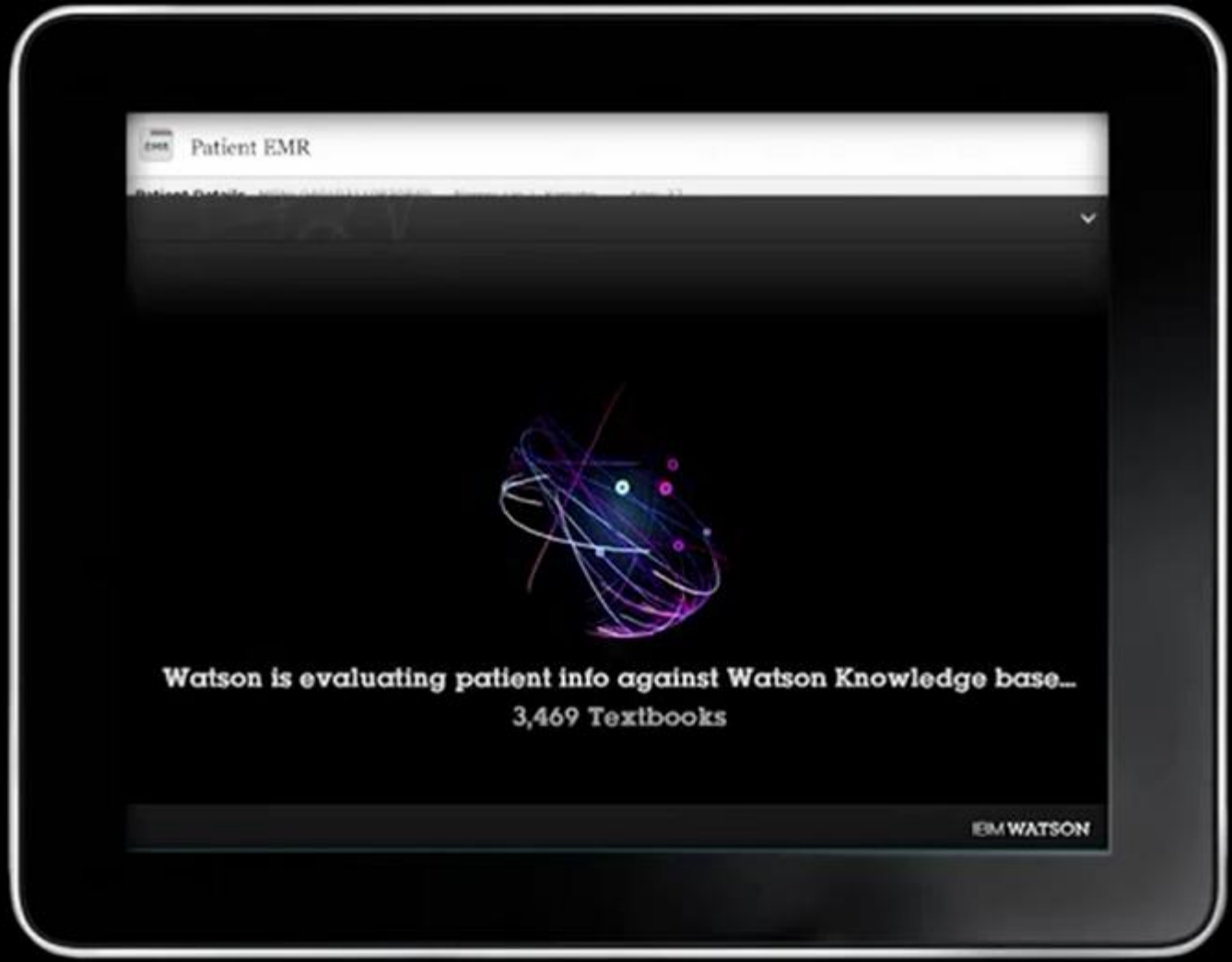
Preparation for Doctor's First Consultation with Patient

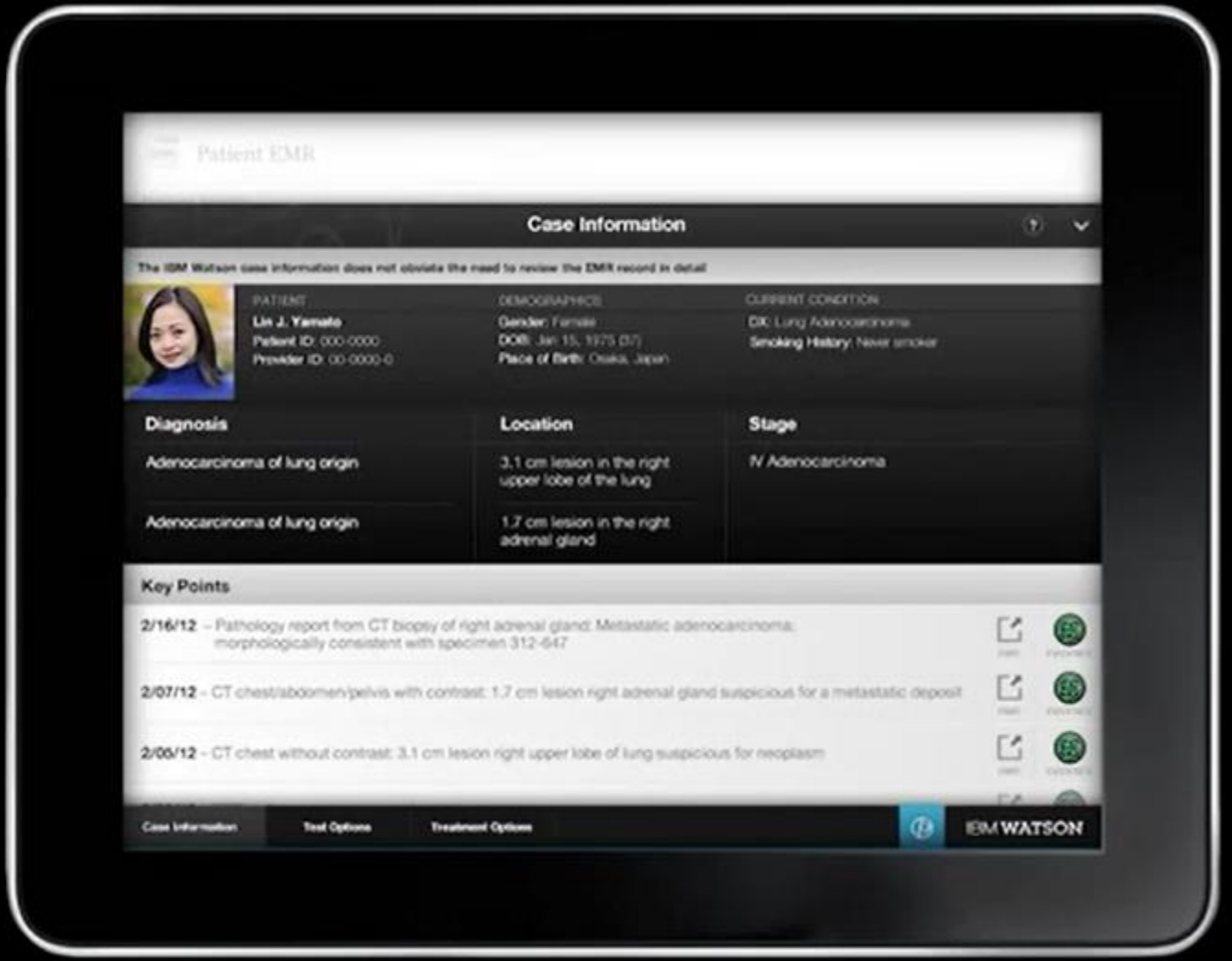


IBM WATSON

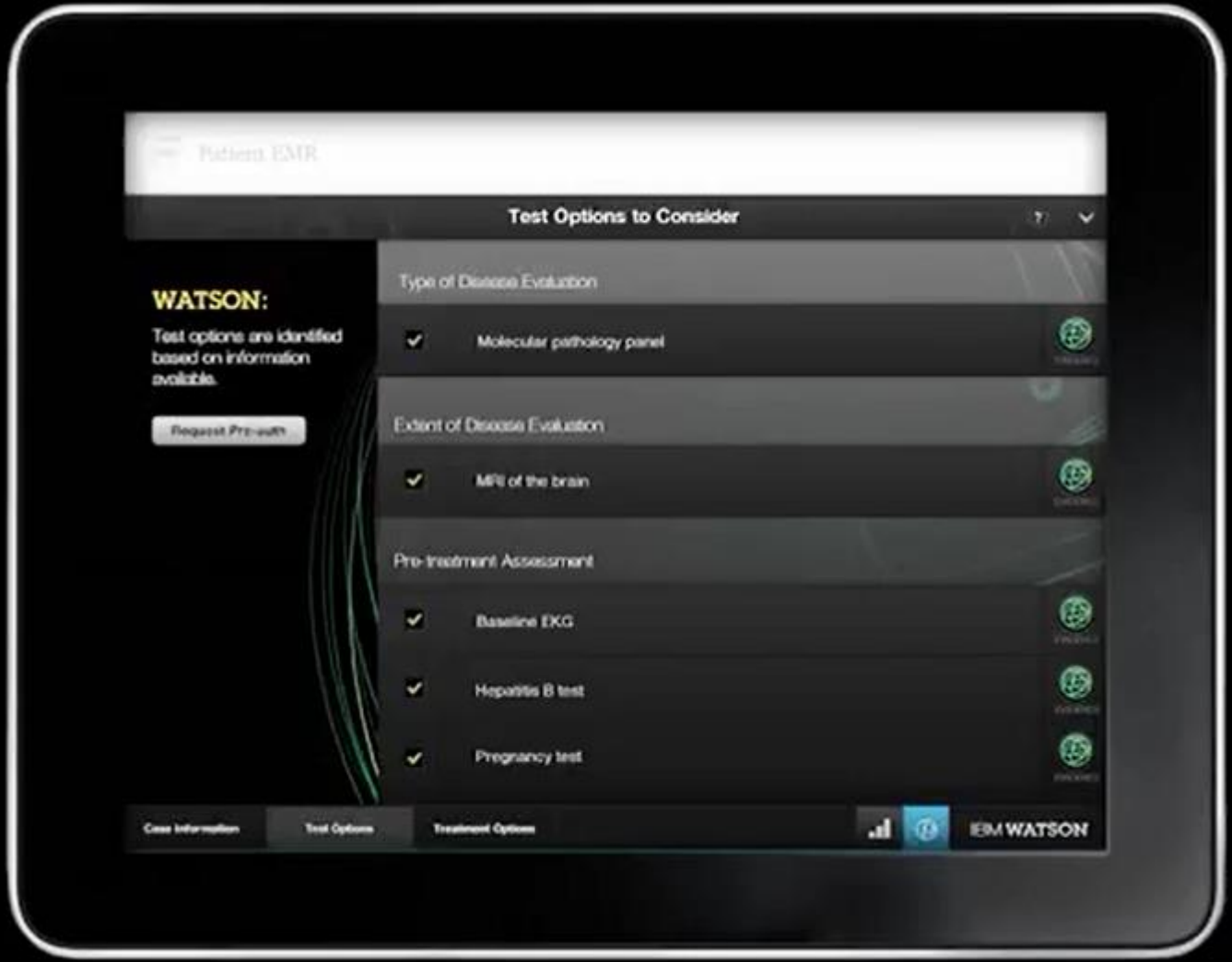
Memorial Sloan-Kettering Cancer Center


Patient EMR
Patient Details
Imaging Report
From date:
To date:
Last:
Units:
Show
Show all
Send to EMR
Reset
Imaging
Report
Imaging Details
Sort By:
Modality
Ordered by
Date
Expand all
Collapse all
MRI
CT (3)
CT Chest (2)
02/07/2012:
CT Abdomen (1)
Chest CT Report
Referring Physician
Dr. Joanne Cameron
Source
N/A
Referral Date
01/05/2012
Electronically Signed
Dr. Joanne Cameron
HIDE IMAGE
Ordered by
Dr. Joanne Cameron
Indication
Abnormal chest x-ray
Status
Signed
Ask Watson


Patient EMR
Watson is evaluating patient info against Watson Knowledge base...
3,469 Textbooks
IBM WATSON

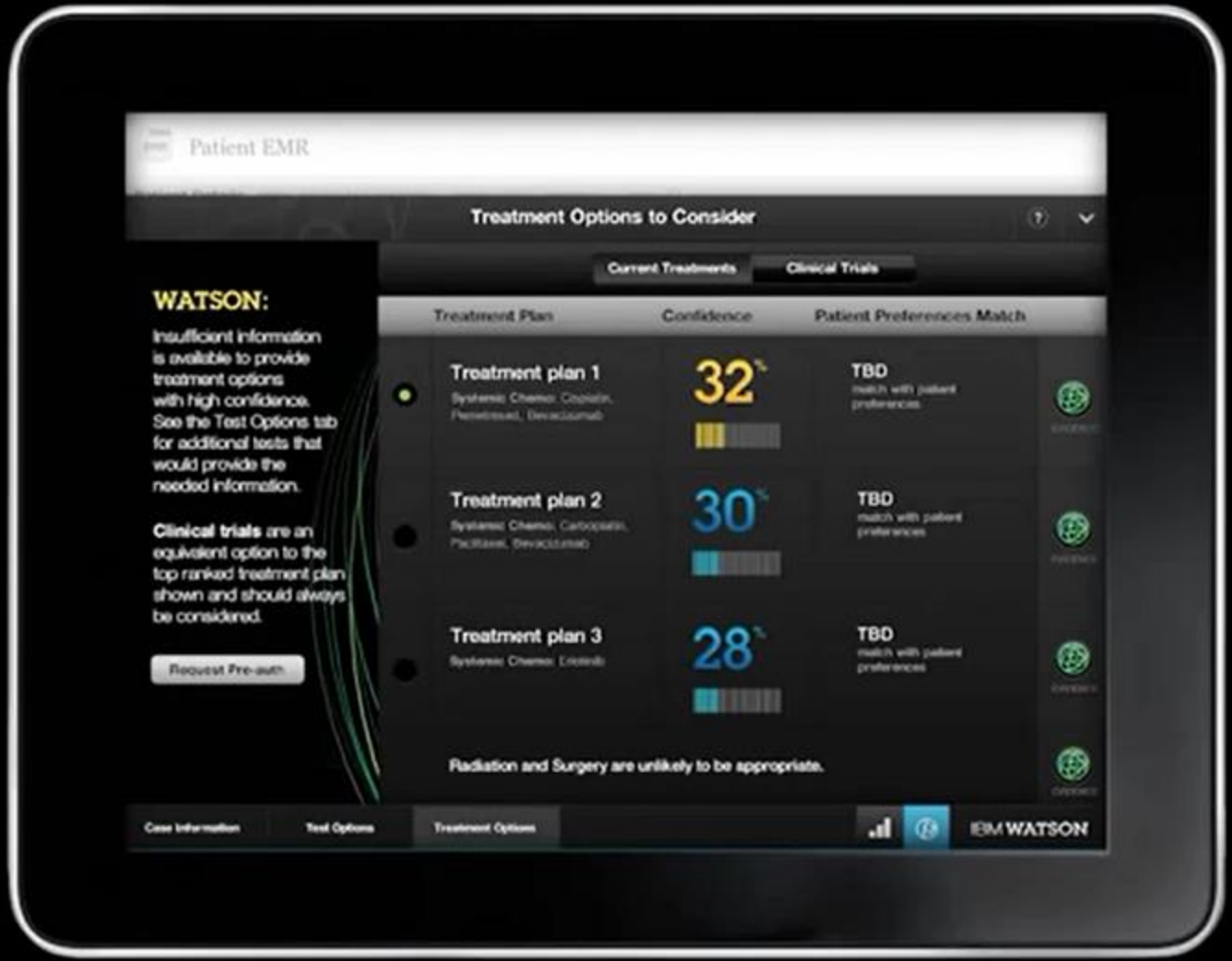

Patient EMR
Case Information
The IBM Watson case information does not obviate the need to review the EMR record in detail
PATIENT
Lin J. Yamato
Patient ID: 000-0000
Provider ID: 00-0000-0
DEMOGRAPHICS
Gender: Female
DOB: Jan 15, 1975 (37)
Place of Birth: Osaka, Japan
CURRENT CONDITION
DX: Lung Adenocarcinoma
Smoking History: Never smoker
Diagnosis
Location
Stage
Adenocarcinoma of lung origin
3.1 cm lesion in the right upper lobe of the lung
IV Adenocarcinoma
Adenocarcinoma of lung origin
1.7 cm lesion in the right adrenal gland
Key Points
2/16/12 - Pathology report from CT biopsy of right adrenal gland: Metastatic adenocarcinoma; morphologically consistent with specimen 312-647
2/07/12 - CT chest/abdomen/pelvis with contrast: 1.7 cm lesion right adrenal gland suspicious for a metastatic deposit
2/05/12 - CT chest without contrast: 3.1 cm lesion right upper lobe of lung suspicious for neoplasm
Case Information
Test Options
Treatment Options
IBM WATSON


Patient EMR
Case Information
The IBM Watson case information does not obviate the need to review the EMR record in detail
PATIENT
Lin J. Yamato
Patient ID: 000-0000
Provider ID: 00-0000-0
DEMOGRAPHICS
Gender: Female
DOB: Jan 15, 1973 (37)
Place of Birth: Osaka, Japan
CURRENT CONDITION
DX: Lung Adenocarcinoma
Smoking History: Never smoker
Key Points
2/16/12 – Pathology report from CT biopsy of right adrenal gland: Metastatic adenocarcinoma; morphologically consistent with specimen 312-847
2/07/12 – CT chest/abdomen/pelvis with contrast: 1.7 cm lesion right adrenal gland suspicious for a metastatic deposit
2/05/12 – CT chest without contrast: 3.1 cm lesion right upper lobe of lung suspicious for neoplasm
2/03/12 – PCP visit note: dry cough - labored breathing
Information Needed
Has the patient experienced any hemoptysis?
Does the patient have normal hearing?
Case Information
Test Options
Treatment Options
IBM WATSON

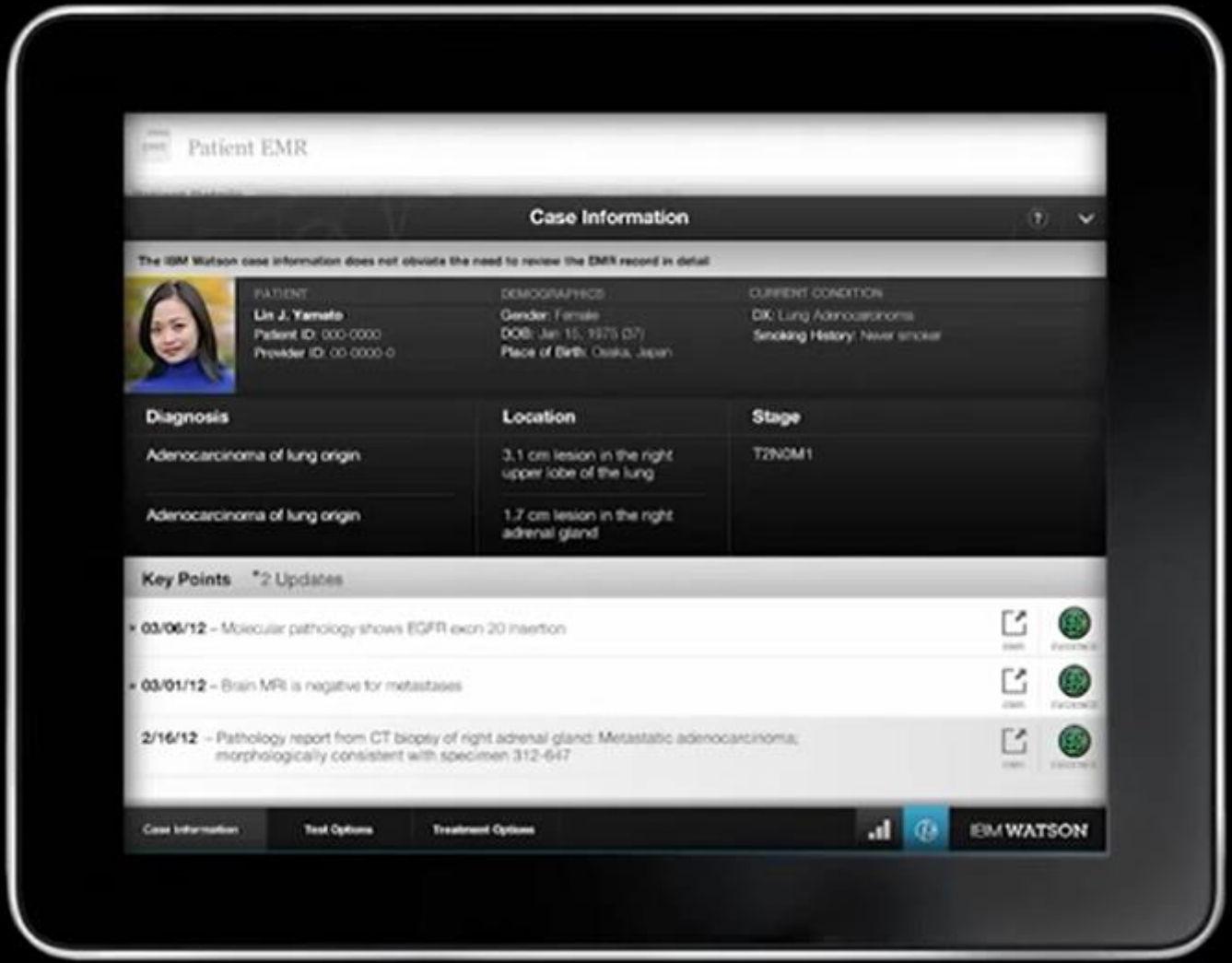

Patient EMR
Test Options to Consider
WATSON:
Test options are identified based on information available.
Request Pre-auth
Type of Disease Evaluation
Molecular pathology panel
Extent of Disease Evaluation
MRI of the brain
Pre-treatment Assessment
Baseline EKG
Hepatitis B test
Pregnancy test
Case Information
Test Options
Treatment Options
IBM WATSON

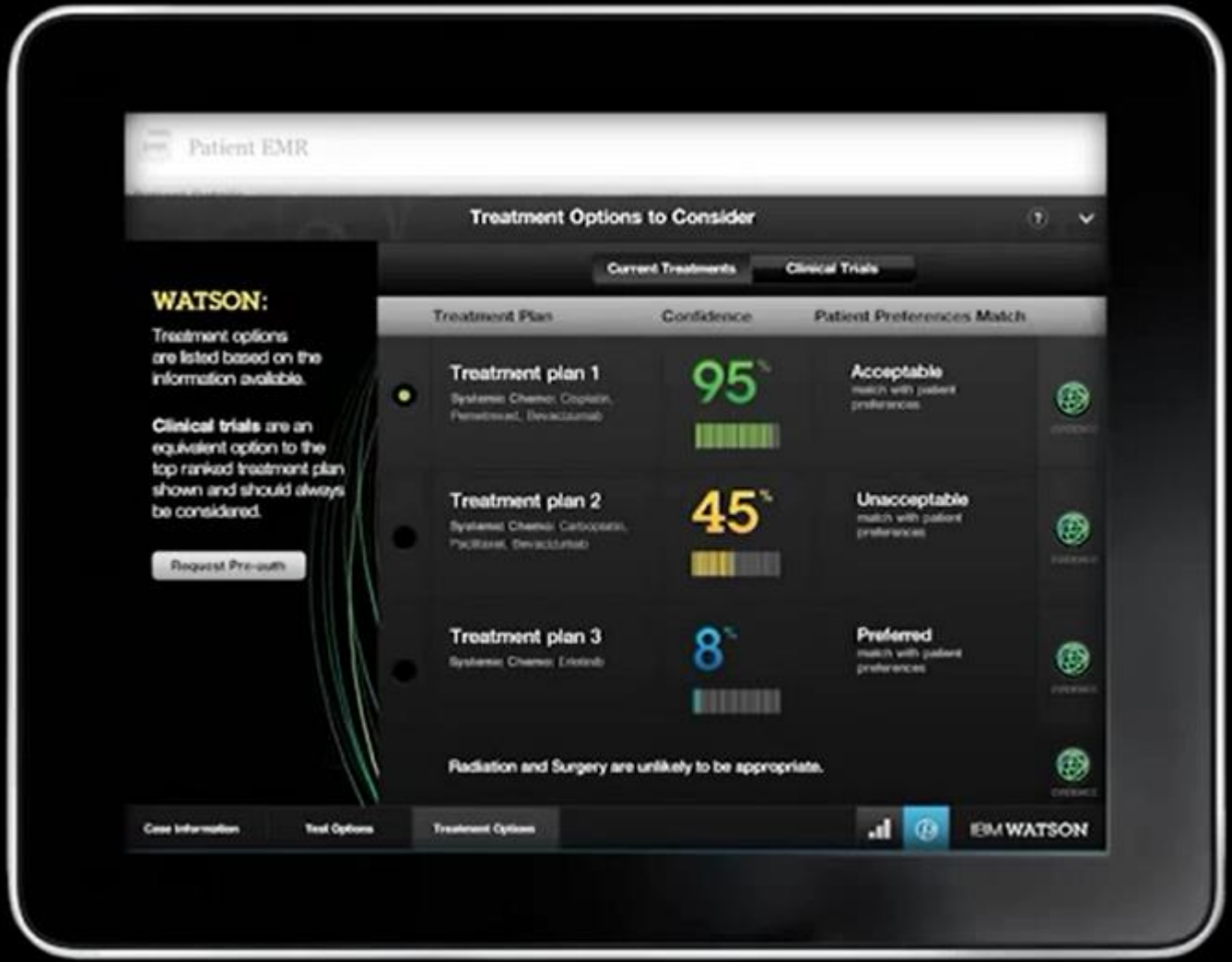

Patient EMR
Test Options to Consider
WATSON
Molecular pathology panel
Supporting Evidence
References
Due to frequent presence of driver mutations in patients with lung cancers, it is recommended that all patients are tested for EGFR, KRAS, ALK mutations.
Case Information
Test Options
Treatment Options
IBM WATSON

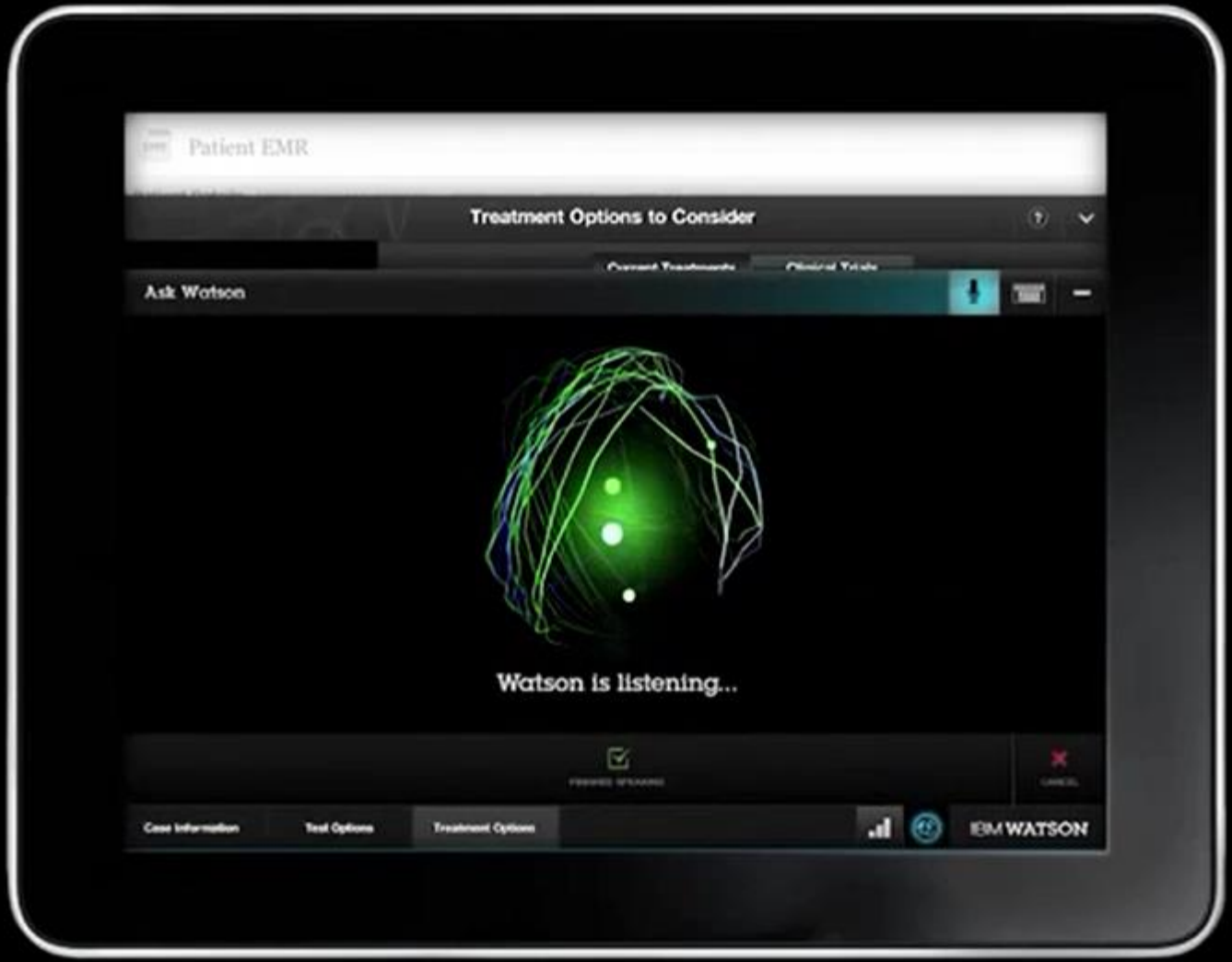

Patient EMR
Test Options to Consider
WATSON
Molecul
Reference
Supporting
Purpose: EGFR mutations underlie the sensitivity of lung cancers to erlotinib and gefitinib and can occur in any patient with this illness. Here we examine the frequency of EGFR mutations in smokers and men.
Results: We tested 2,142 lung adenocarcinoma specimens for the presence of EGFR exon 19 deletions and L858R. EGFR mutations were found in 15% of tumors from former smokers (181 of 1,218; 95% CI, 13% to 17%), 6% from current smokers (20 of 344; 95% CI, 4% to 9%), and 52% from never smokers (302 of 580; 95% CI, 48% to 56%; P < .001 for ever v never smokers). EGFR mutations in former or current smokers represented 40% of all those detected (201 of 503; 95% CI, 36% to 44%). EGFR mutations were found in 19% (157 of 827; 95% CI, 16% to 22%) of tumors from men and 26% (346 of 1,315; 95% CI, 24% to 29%) of tumors from women (P < .001). EGFR mutations in men represented 31% (157 of 503; 95% CI, 27% to 35%) of all those detected.
Conclusion: A large number of EGFR mutations are found in adenocarcinoma tumor specimens from men and people who smoked cigarettes. If only women who were never smokers were tested, 57% of all EGFR mutations would be missed. Testing for EGFR mutations should be considered for all patients with adenocarcinoma of the lung at diagnosis, regardless of clinical characteristics. This strategy can extend the use of EGFR tyrosine kinase inhibitors to the greatest number individuals with the potential for substantial benefit.
Case Information
Test Options
Treatment Options
IBM WATSON

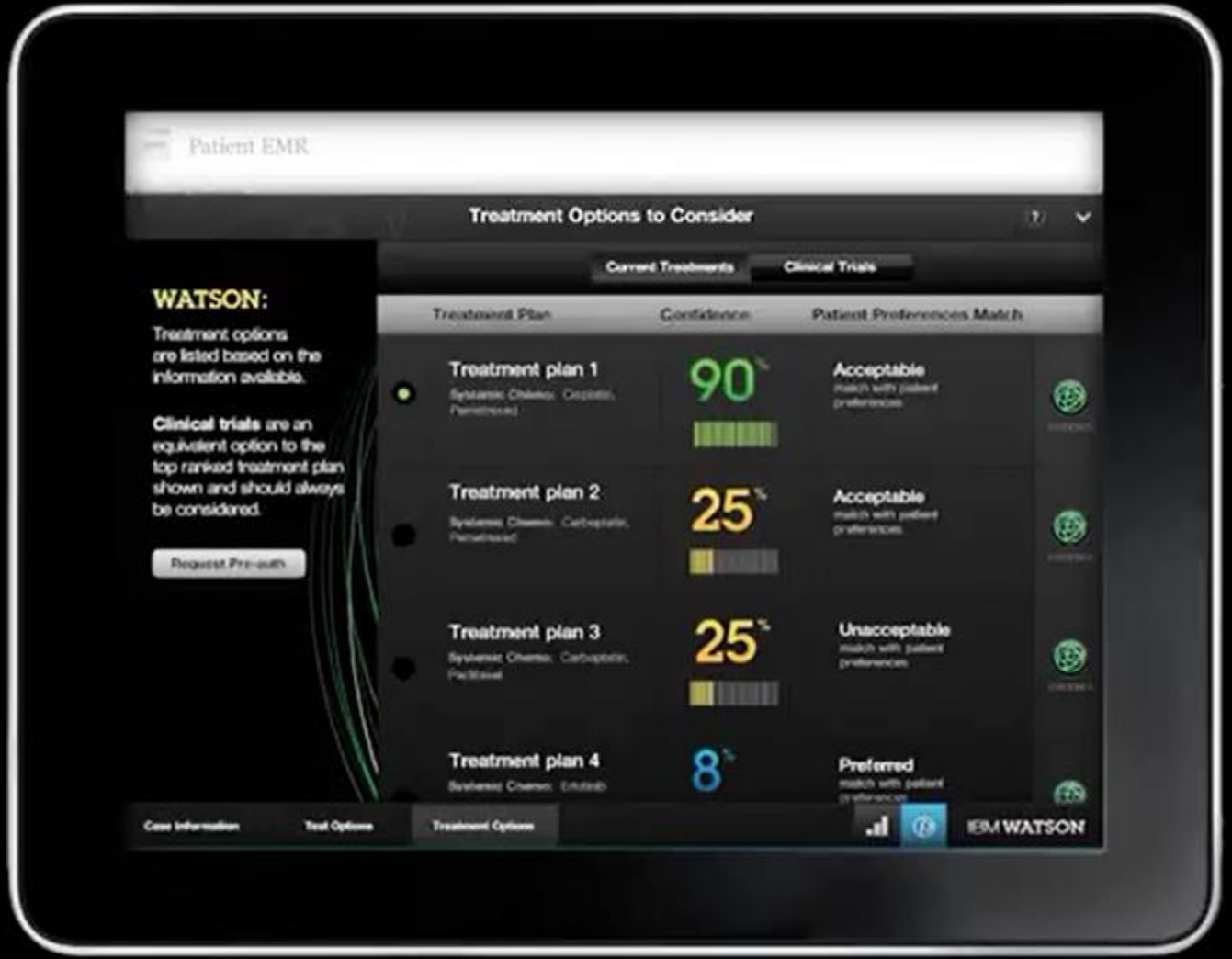

Patient EMR
Treatment Options to Consider
Current Treatments
Clinical Trials
WATSON:
Insufficient information is available to provide treatment options with high confidence. See the Test Options tab for additional tests that would provide the needed information.
Clinical trials are an equivalent option to the top ranked treatment plan shown and should always be considered.
Request Pre-auth
Treatment Plan
Confidence
Patient Preferences Match
Treatment plan 1
32%
TBD
match with patient preferences
Treatment plan 2
30%
TBD
match with patient preferences
Treatment plan 3
28%
TBD
match with patient preferences
Radiation and Surgery are unlikely to be appropriate.
Case Information
Test Options
Treatment Options
IBM WATSON


Patient EMR
Patient Details MRN: 040103110830840 Name: Lee J. Yamato Age: 37
Imaging Report
From date:
To date:
Last:
Units:
Show
Show all
Send to EMR
Reset
Imaging
Report
Imaging Details
Sort By:
Modality
Ordered by
Date
Expand all
Collapse all
CT (3)
MRI (1)
MRI Brain (1)
03/01/2013:
Dr. Mark Kris, MSKCC
/ Brain
Brain MRI Report
Referring Physician
Dr. Mark Kris, MSKCC
Source
N/A
Referral Date
01/05/2012
Electronically Signed
Dr. Mark Kris, MSKCC
HIDE IMAGE
Ordered by
Dr. Mark Kris, MSKCC
Indication
Rule out brain metastasis
Status
Signed
Case Information
Treatment Options
IBM WATSON

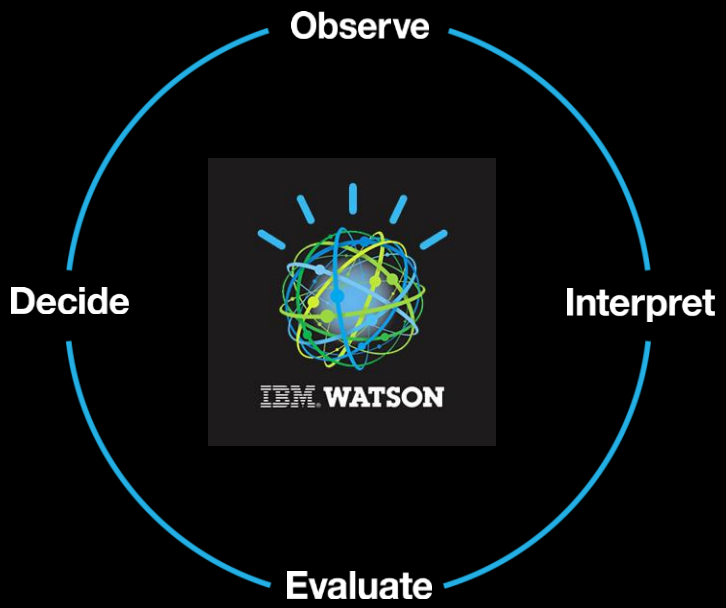

Patient EMR
Case Information
The IBM Watson case information does not obviate the need to review the EMR record in detail
PATIENT
Lin J. Yamato
Patient ID: 000-0000
Provider ID: 00-0000-0
DEMOGRAPHICS
Gender: Female
DOB: Jan 15, 1975 (37)
Place of Birth: Osaka, Japan
CURRENT CONDITION
DX: Lung Adenocarcinoma
Smoking History: Never smoker
Diagnosis
Location
Stage
Adenocarcinoma of lung origin
3.1 cm lesion in the right upper lobe of the lung
T2N0M1
Adenocarcinoma of lung origin
1.7 cm lesion in the right adrenal gland
Key Points
*2 Updates
• 03/06/12 – Molecular pathology shows EGFR exon 20 insertion
• 03/01/12 – Brain MRI is negative for metastases
2/16/12 – Pathology report from CT biopsy of right adrenal gland: Metastatic adenocarcinoma; morphologically consistent with specimen 312-647
Case Information
Test Options
Treatment Options
IBM WATSON


Patient EMR
Treatment Options to Consider
Current Treatments
Clinical Trials
WATSON:
Treatment options are listed based on the information available.
Clinical trials are an equivalent option to the top ranked treatment plan shown and should always be considered.
Request Pre-auth
Treatment Plan
Confidence
Patient Preferences Match
Treatment plan 1
95%
Acceptable
match with patient preferences
Treatment plan 2
45%
Unacceptable
match with patient preferences
Treatment plan 3
8%
Preferred
match with patient preferences
Radiation and Surgery are unlikely to be appropriate.
Case Information
Test Options
Treatment Options
IBM WATSON


Patient EMR
Treatment Options to Consider
Ask Watson
Watson is listening...
Case Information
Test Options
Treatment Options
IBM WATSON

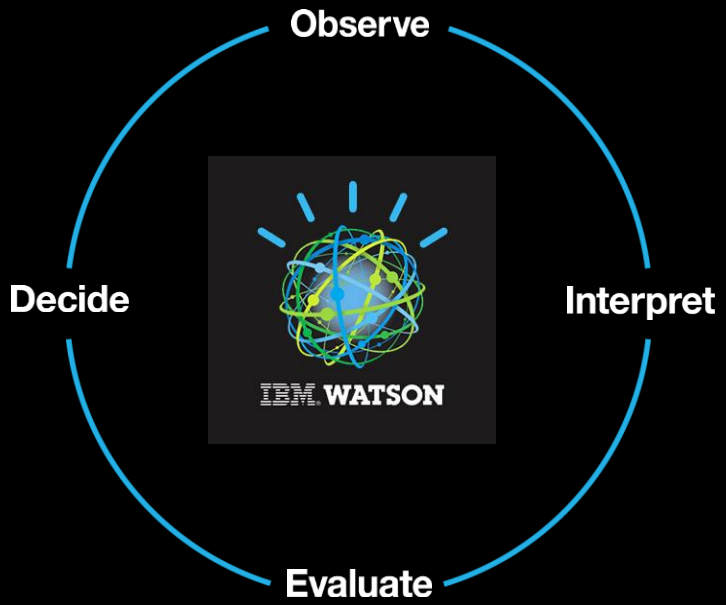

Patient EMR
Treatment Options to Consider
Current Treatments
Clinical Trials
WATSON:
Treatment options are listed based on the information available.
Clinical trials are an equivalent option to the top ranked treatment plan shown and should always be considered.
Request Pre-auth
Treatment Plan
Confidence
Patient Preferences Match
Treatment plan 1
90%
Acceptable
Treatment plan 2
25%
Acceptable
Treatment plan 3
25%
Unacceptable
Treatment plan 4
8%
Preferred
Case Information
Test Options
Treatment Options
IBM WATSON

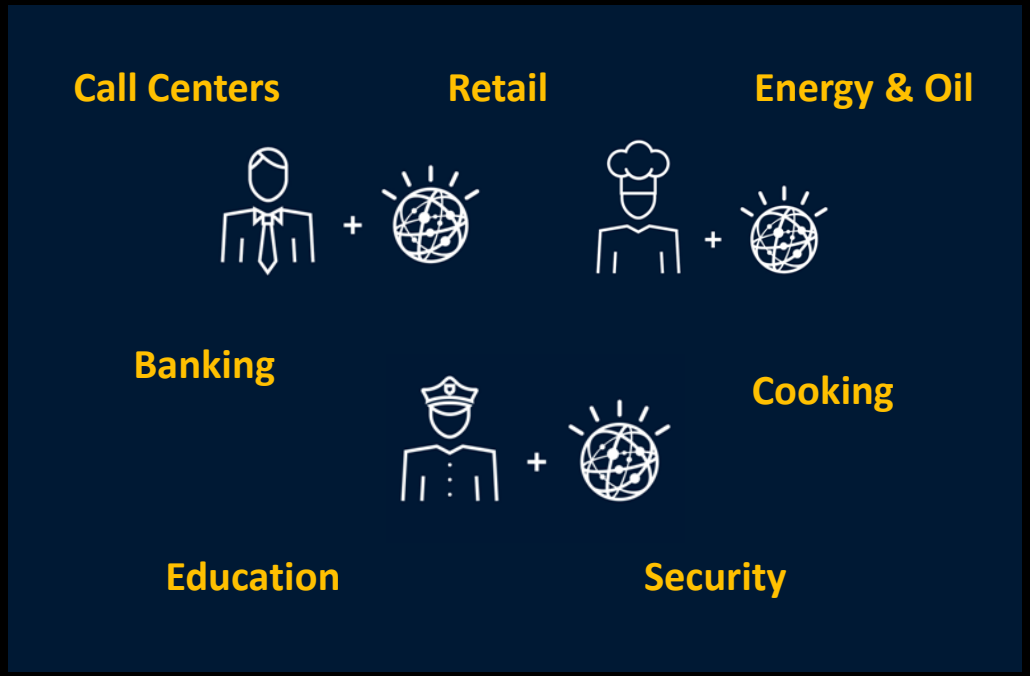
Cognitive Computing is transforming our industries



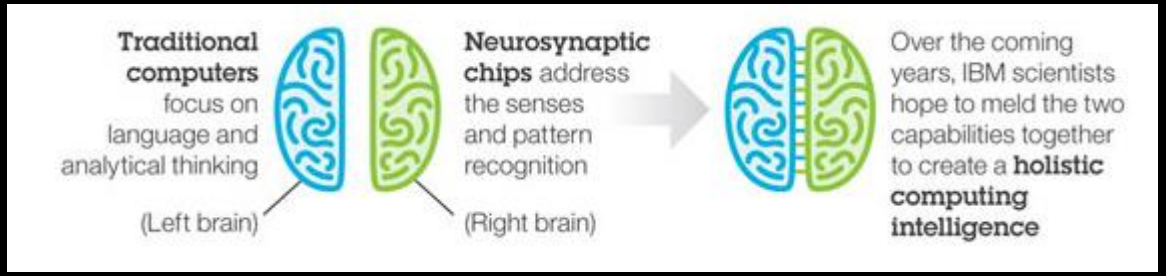
Watson transforming Life Science Industry:
With Watson, 7 cancer targets found in a few weeks.
Before Watson, the norm is 1 per year.

and soon more aspects of *our lives will be transformed*





TrueNorth – First Brain-inspired Neurosynaptic Chip



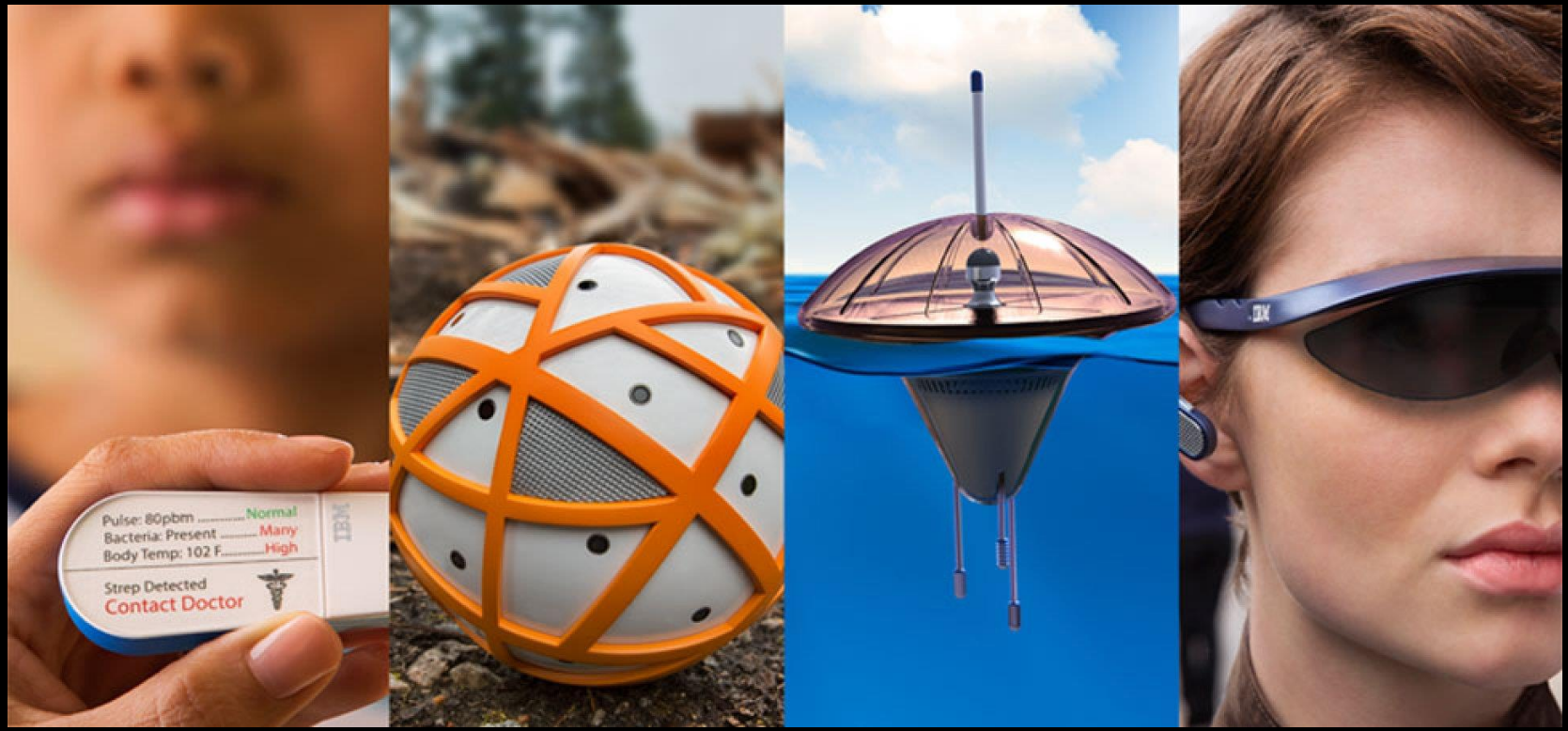
Unprecedented scale

This second generation chip is the culmination of almost a decade of research and development, and is a huge leap forward from the initial single-core hardware prototype developed in 2011.

	2011	2014
Programmable neurons	256	1 million
Programmable synapses	262,144	256 million
Neurosynaptic cores	1	4,096

1/10th of a Watt powers the neurosynaptic chip's 256 million synapses
...with the goal to simulate 1 trillion synapses using only **4kW of energy**

Pilot applications of TrueNorth chip - sample



We are collaborating with our strategic partners

IBM

As a country, as companies and as individuals
we need to move to digital era to compete in this world

	2014	*2023*
Turkey Economic Size	*18th Largest*	*Among Top 10*
GDP	*810 B USD*	*2 TRL USD*
Annual Exports	*160 B USD*	*500 B USD*
IT Spending	*1% GDP*	*3% GDP*

We spend %80
on Infrastructure!

IBM

What will we make of *this moment*?