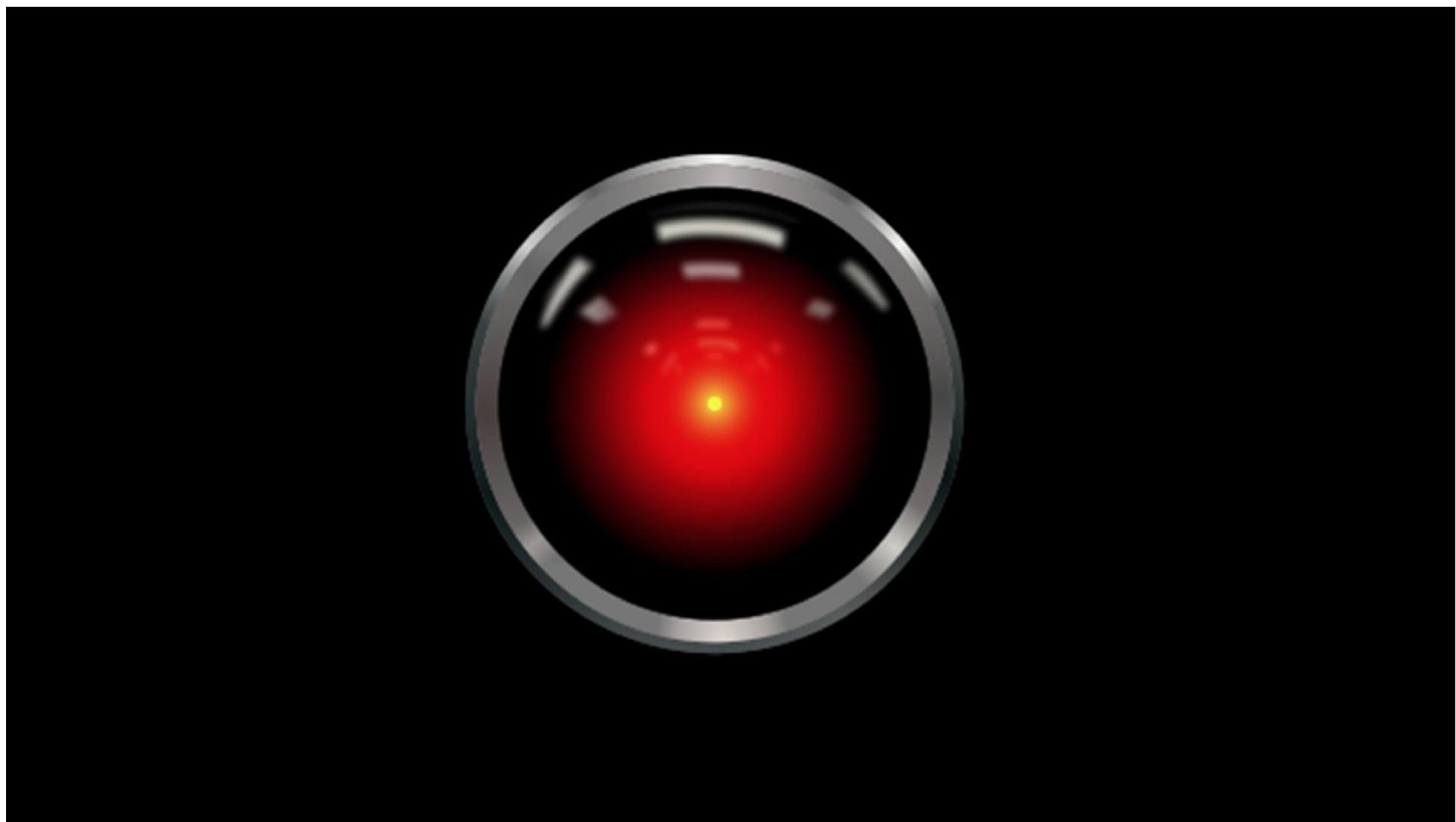


L'IA et L'Entreprise 4.0

2 Avril 2019

Hacene Cherfi – Senior Cognitive Consultant
Sylvain Pornon – Practice Leader Watson IoT & Industry 4.0





Pourquoi les entreprises apprenantes sont intéressantes ?

+ 68%

des dirigeants d'entreprises accordant plus d'importance à l'expérience client qu'au produit

+ 80%

des données se trouvent à l'intérieur des entreprises

+ 64%

des entreprises ont fait de l'introduction et l'implémentation des méthodes agiles un chantier prioritaire

+ 72%

des entreprises qui mènent la disruption au sein de leur secteur sont des acteurs en place innovants

L'Entreprise Apprenante



IBM



Cognitive systems are creating a new partnership between humans and technology

Humans excel at:



Common Sense



Dilemmas



Morals



Compassion



Imagination



Dreaming



Abstraction



Generalization

Cognitive systems excel at:



Natural
Language



Pattern
Identification



Locating
Knowledge



Machine
Learning



Eliminate
Bias



Endless
Capacity

There are three capabilities that differentiate cognitive systems from traditional programmed computing systems



Understanding

Cognitive systems understand like humans do.



Reasoning

They reason. They can understand information but also the underlying ideas and concepts.

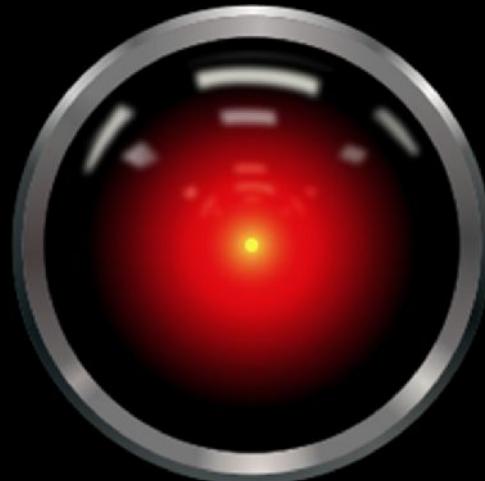


Learning

They never stop learning. As a technology, this means the system actually gets more valuable with time. They develop “expertise.”

AI definition

AI is the simulation of human intelligence processes by computers. These processes include understanding, reasoning, learning, and self-correction.



“Algorithms are only as good
as the **data** we train
them with.”

Agenda



1. Historique IA
2. Cas clients Watson
3. Watson IoT et IA pour l'Industrie 4.0
4. Conclusion



Historique IA

The birth of artificial intelligence



"We propose that a 2 month, 10 man study of **artificial intelligence** be carried out... The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it... We think that a **significant advance** can be made in one or more of these problems if a carefully selected group of scientists work on it together for a **summer**."

1956 Dartmouth Conference: The Founding Fathers of AI



John McCarthy



Marvin Minsky



Claude Shannon



Ray Solomonoff



Alan Newell



Herbert Simon



Arthur Samuel



Oliver Selfridge

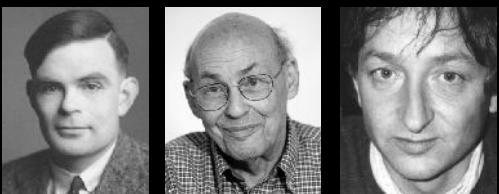


Nathaniel Rochester



Tenchard More

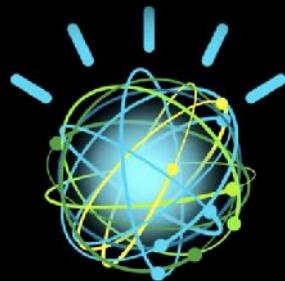
AI/ML Foundations



A. Turing M. Minsky G.
Hinton

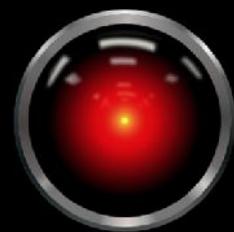
AI/ML as the domain of the academic and researcher.
Few applications for everyday life.

AI/ML Today



AI/ML in widespread use to enhance everyday life, usually applied to specific narrow problems or tasks.

AI/ML Tomorrow



Artificial general intelligence and robotics enables computers to surpass the abilities of humans at most physical and mental tasks



L'hiver de l'intelligence artificielle

WHY?

L'hiver de l'intelligence artificielle

La puissance de calcul



La donnée





Développement des technologies
Arrivée de l'ordinateur quantique

Pourquoi les technologies IA sont intéressantes ?

D'ici 2020 , 1.7 MB de nouvelles données seront créées CHAQUE SECONDE pour CHAQUE PERSONNE.



Le volume de données produit dépasse NOTRE CAPACITÉ À LES TRAITER.



Le printemps de l'intelligence artificielle

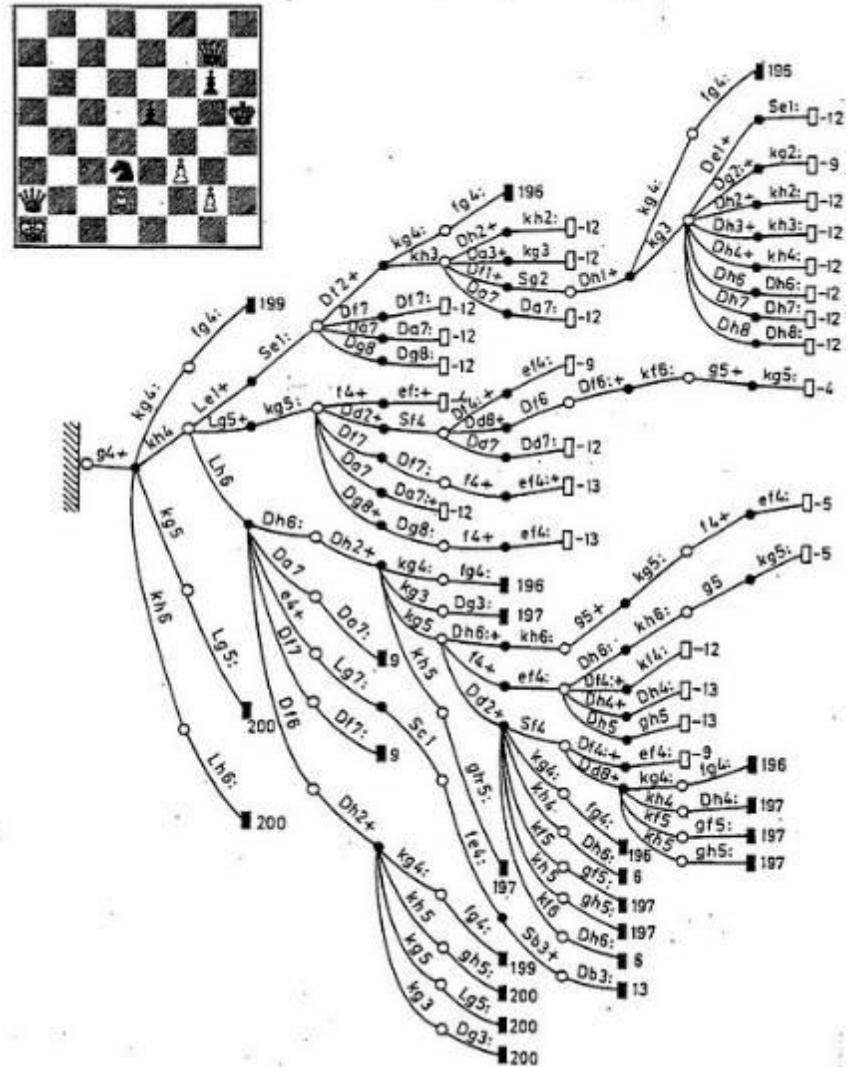
1997 - Deep Blue vs. Kasparov



How did Deep Blue defeat Kasparov?

In 1997 IBM's Deep Blue defeated the reigning world chess champion had been defeated in tournament conditions.

A powerful computer; whose evaluation function was learned from thousands of **human master games...**



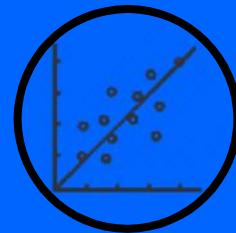




2017- AlphaGo Zero vs. itself...



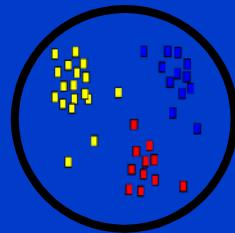
Learning Approaches



Supervised Learning

Learning with a labeled training set

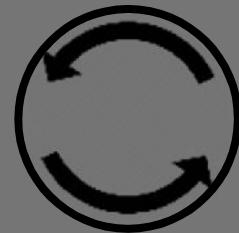
Task-driven
Predictive model



Unsupervised Learning

Discovering patterns in unlabeled data

Data-driven
Descriptive model



Reinforcement Learning

Learning based on feedback or reward

Reaction to an environment
Trial and error



Cas d'utilisation de Watson chez nos clients en France



Watson gère la relation client



2. Watson 4 Client





Watson répond à vos mails



2. Watson 4 Client

L'Email Analyzer pour les conseillers clientèles (1/2)



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Watson Propose

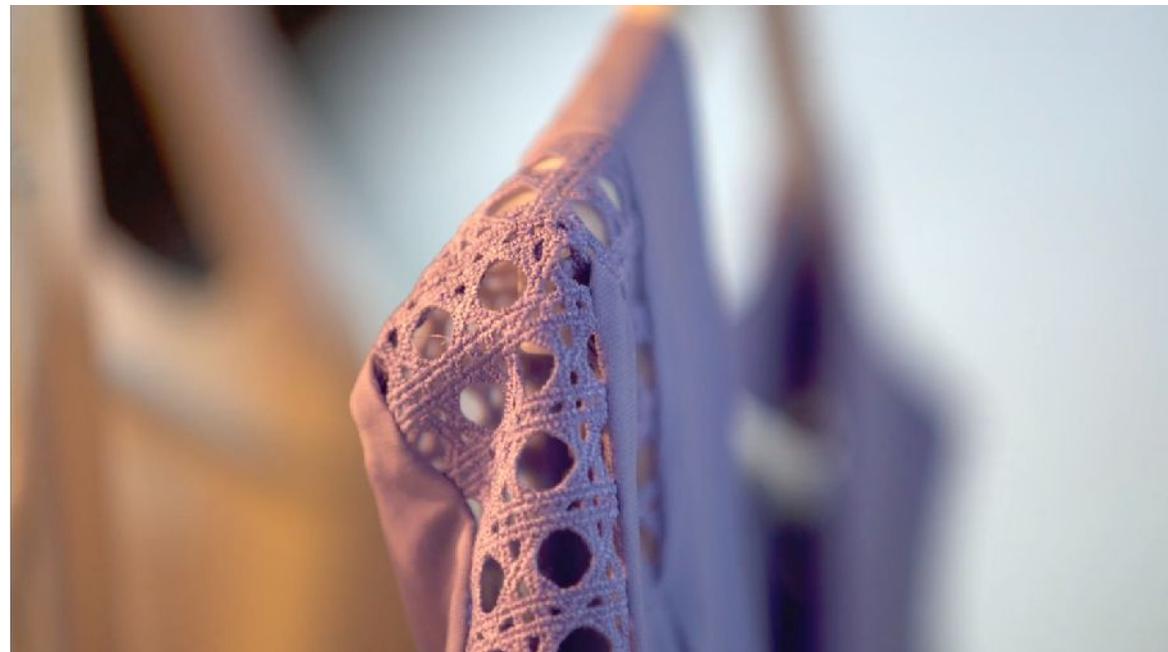
2. Watson 4 Client

Le Conseiller Augmenté dans l'industrie Fashion



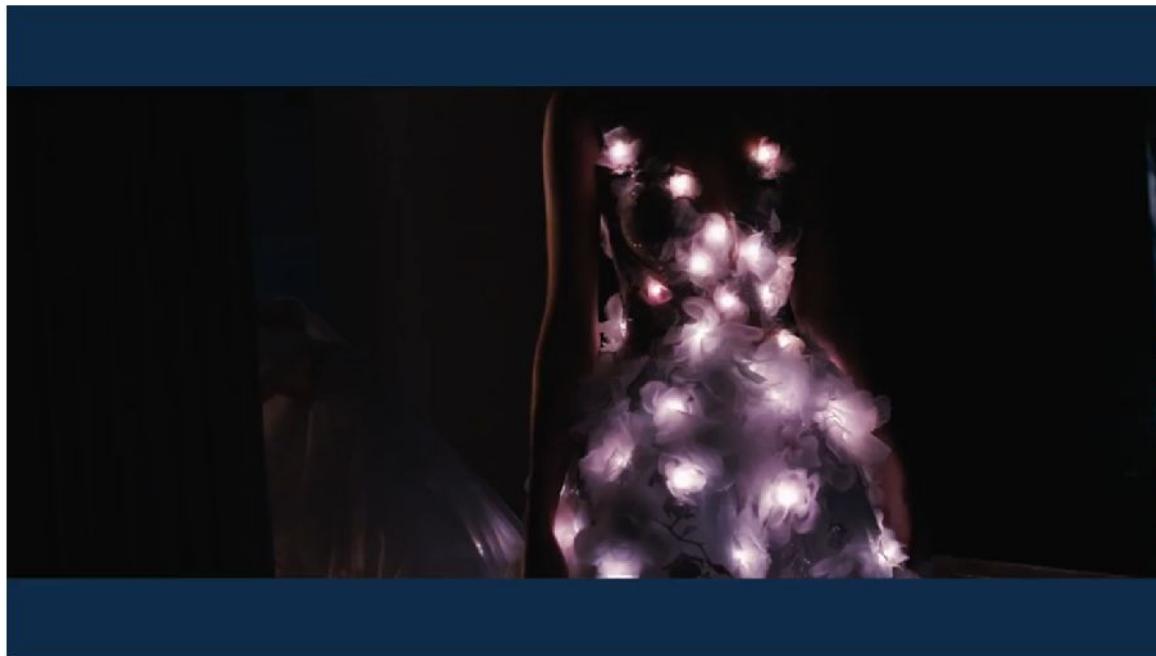
Le Conseiller "Augmenté"

Des **offres personnalisées et contextualisées** avec une vision 360° grâce aux technologies cognitives, prédictives et prescriptives



2. La robe cognitive

Une robe connecté à vos émotions



La robe Cognitive

Co-création entre
Marchesa et IBM
**Watson d'une robe
capable de
communiquer avec le
public**



L'IoT et l'IA pour l'Industrie 4.0

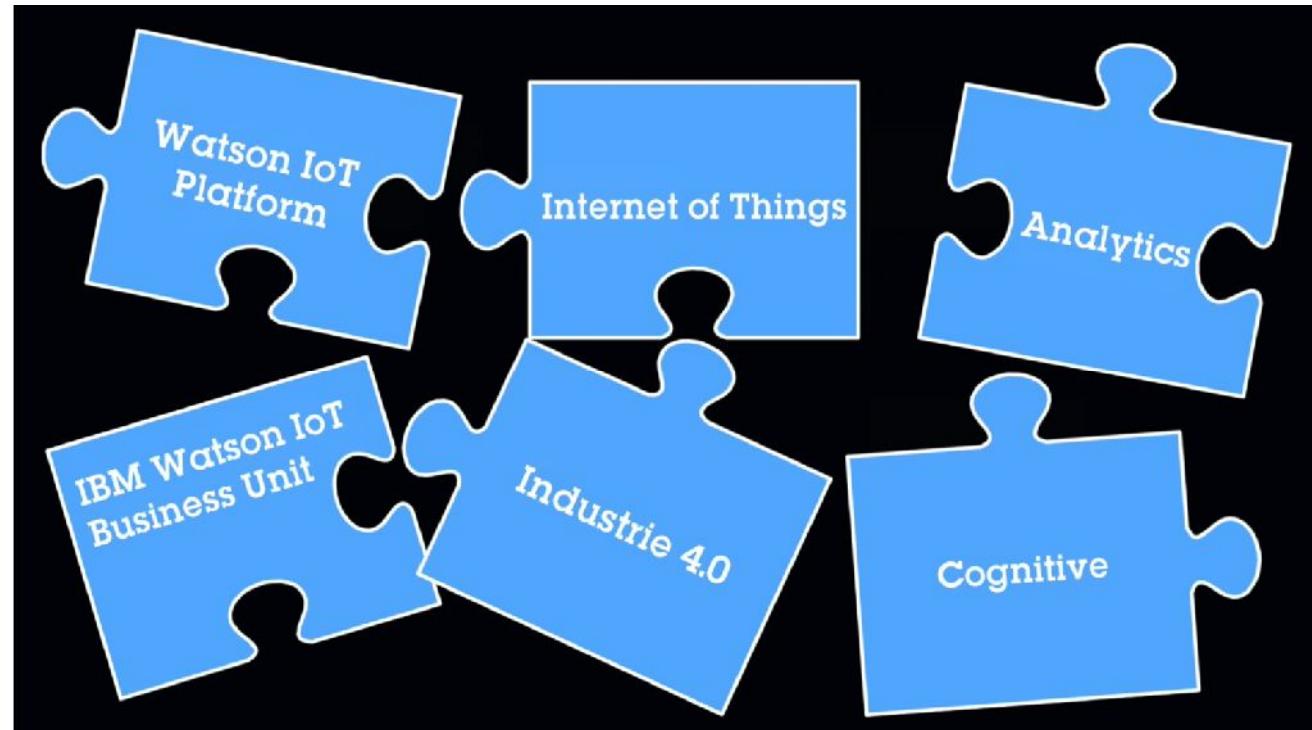
Watson IoT

une plateforme pour connecter, collecter, et valoriser les données des capteurs, équipements,

Watson IoT Concept

Collecter les données
de systèmes existants
ou de capteurs IoT
Stocker et archiver ces
données

Analyser en temps réel
et sur la base
d'historiques des
événements complexes
Fournir des **services à**
valeur ajoutée à base
d'IA aux opérateurs,
consommateurs, et
clients





Using data alone is insufficient.
Businesses must apply
advanced analytics and AI
to capture the next level of
business value.



L'Oréal's Industry 4.0 program augments machines, operators and facilities

The leading FMCG manufacturer partners with IBM to implement a connected manufacturing platform in 40 sites globally to connect machines, operators and sites

Business problem

- To maintain world-class manufacturing status, L'Oréal needs to capture, analyze and derive insights from instrumentation and sensors in its production facilities
- Lack of such insights was reducing overall operational excellence, productivity and throughput, as well as increasing labour and working capital costs

Solution

- IBM will use Watson IoT for Manufacturing platform to build a predictive maintenance solution that enables visualization of production lines for detection of short term events, predictive Analytics on OEE and speed of machines and real time monitoring of operator health and safety

L'ORÉAL



Watch the video

IBM 35

L'Oréal – Industry 4.0

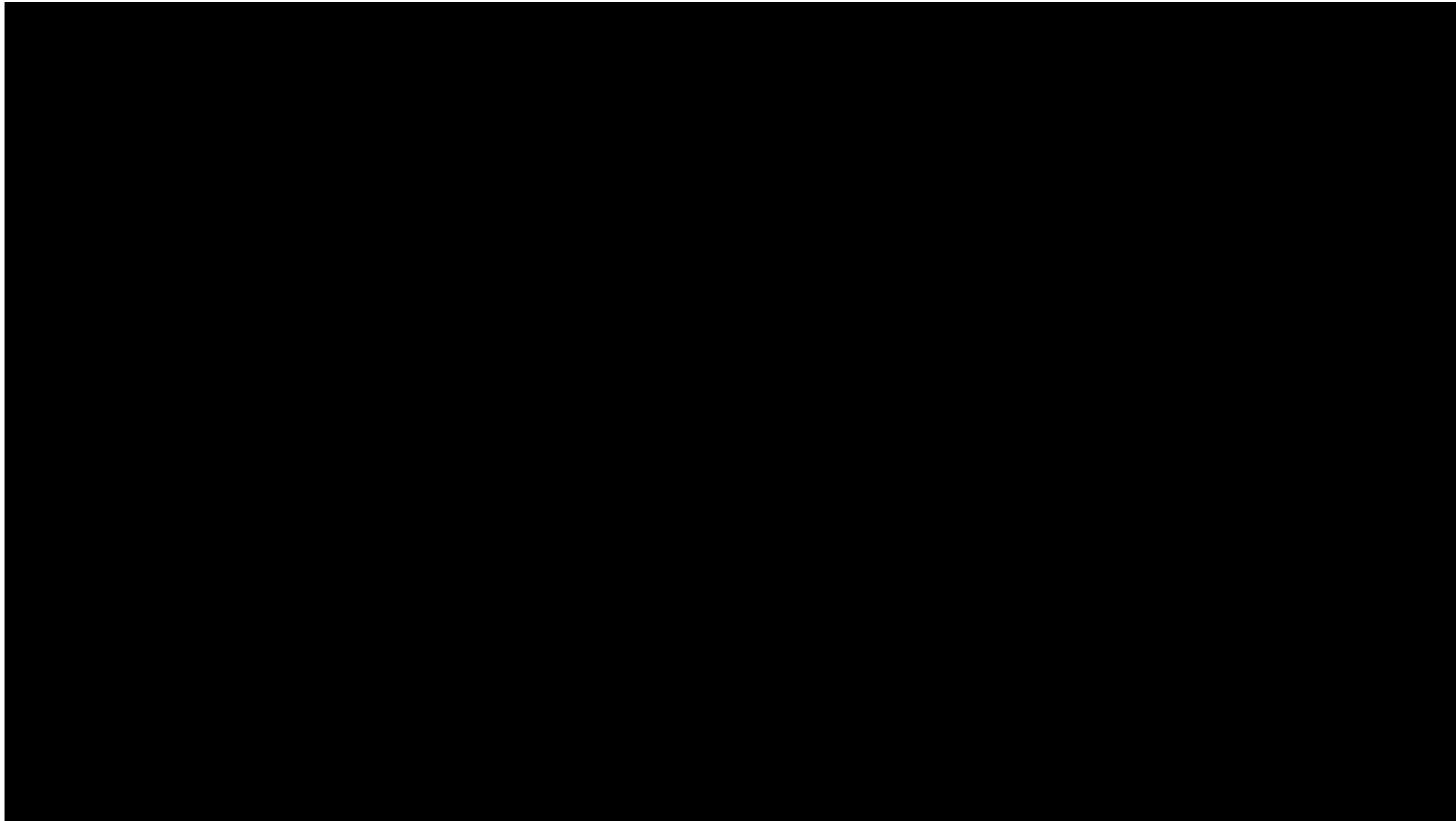
Un projet IoT end to End, du Design Thinking au déploiement à grande échelle



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Le4 Casino

La french belle adresse...





Watson gratuit
pour vous

IBM Academic Initiative

onthehub.com/ibm

Mise à disposition gratuite:

- logiciels
- cours
- guides d'enseignement
- badges



The image shows the OnTheHub* landing page for the IBM Academic Initiative. At the top, there are navigation links for Cloud, Watson, IoT, Data & Analytics, Security, Blockchain, z Systems, Power Systems, Commerce, Mobile, and Quantum. Below the navigation bar, there is a large image of a person's hands holding a globe, with social sharing icons (Facebook, Twitter, Plus) overlaid. The main headline reads "Harness the Power of IBM". Subtext below the headline says, "Get easy access to the tools you need to develop the next great thing. Enjoy powerful technical and strategic resources from IBM." A descriptive paragraph follows, stating, "Jump right in with cloud access to powerful services and the most prominent open-source computer technologies, or take advantage of hands-on resources that will teach you about data and analytics, Internet of Things, and security." The overall theme is global access to IBM's technological resources.

Etape 1 : création d'un compte IBM Cloud : <https://console.ng.bluemix.net/registration/>

Etape 2 : inscription avec un e-mail académique sur le portail : <https://onthehub.com/ibm/>

Etape 3 : codes promo à commander individuellement sur le portail

Etudiants: 6 mois gratuits avec 2GB et 10 services simultanés

Thank you
Any questions?

