

تحديات

كيف نستخدم تقنيات ذكاء الاعمال
في إدارة أداء السلامة والصحة المهنية

CHALLENGES

HOW DO BUSINESSES MAKE **EFFICIENT** OHS
PERFORMANCE MANAGEMENT WITH BUSINESS
INTELLIGENCE?

ALAA HADY
MANAGING PARTNER
ADVANCED MANAGEMENT
SOLUTIONS

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الثورة الصناعية
الأولى

02

الثورة الصناعية
الثانية

03

الثورة الصناعية
الثالثة

04

~~ثورة المعلومات~~

ثروة

المحاور

- ما هي الصعوبات التي تواجهها في جمع مؤشرات الأداء السلامة والصحة المهنية؟

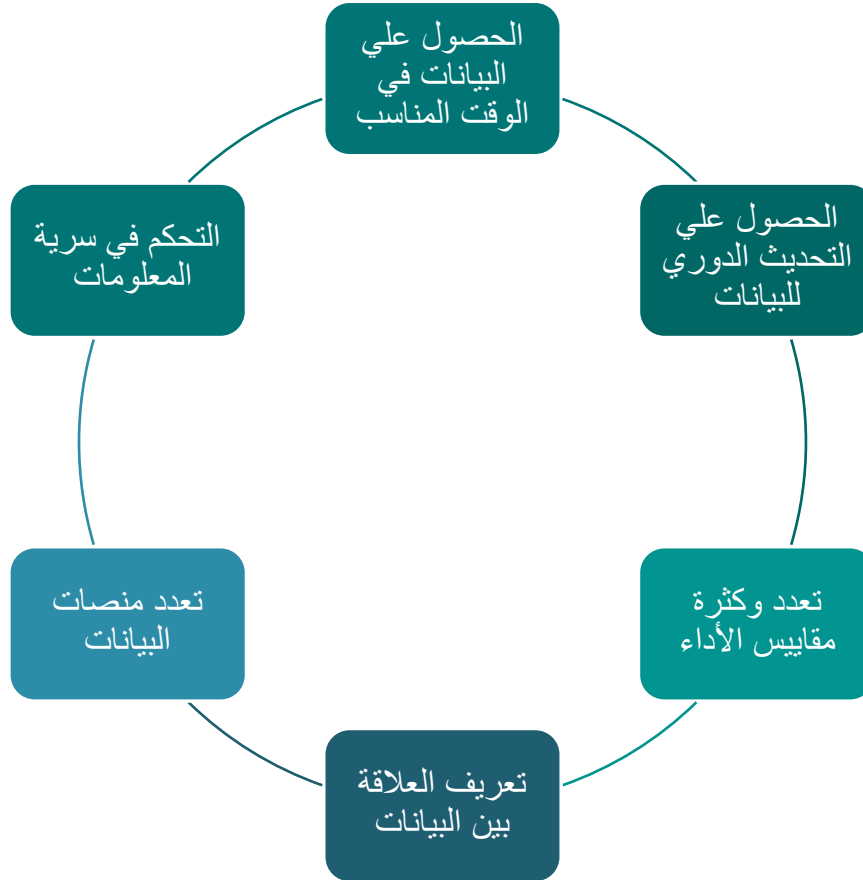
- هل توجد جميع البيانات في نظام واحد ام عدة أنظمة؟

كيف نبني لوحة مؤشرات قياس الأداء للسلامة والصحة المهنية

- كيف نستعمل تقنيات الذكاء الصناعي في تحسين اداء إدارة السلامة والصحة المهنية؟



تحديات تحليل وتنقية وعرض البيانات

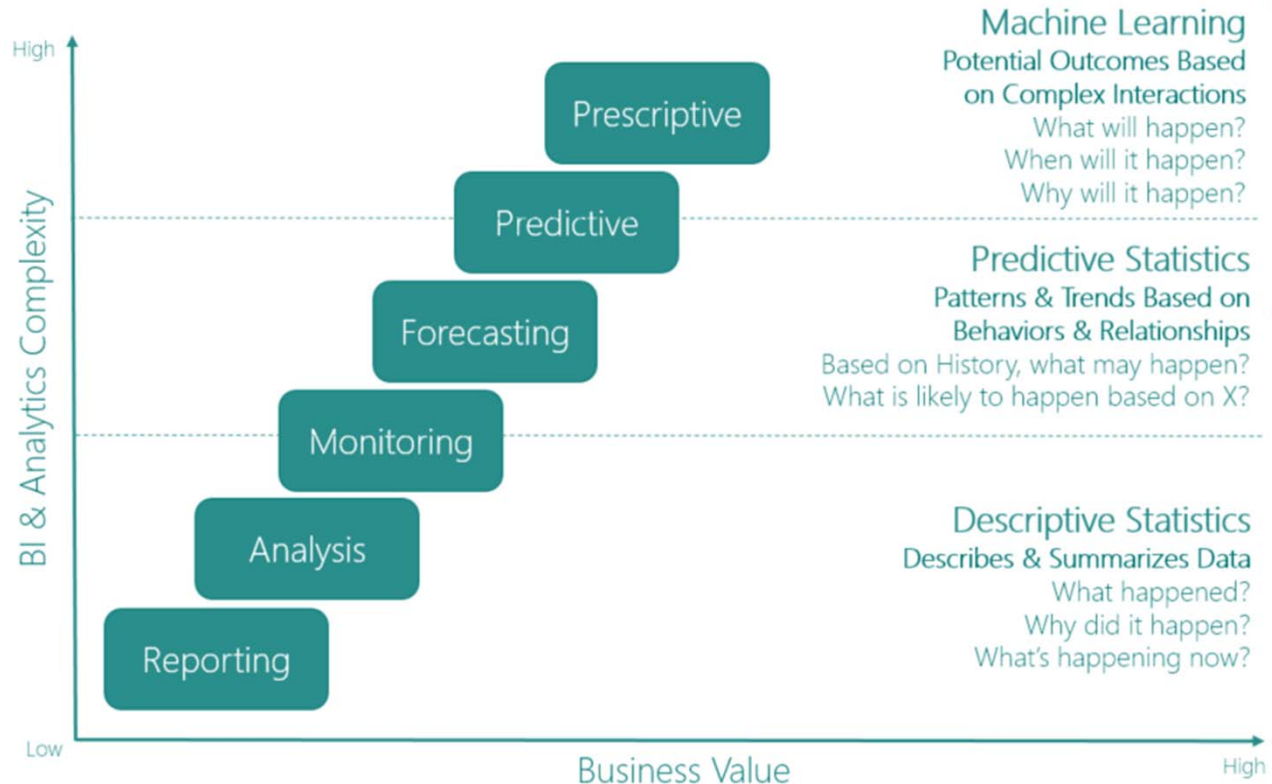


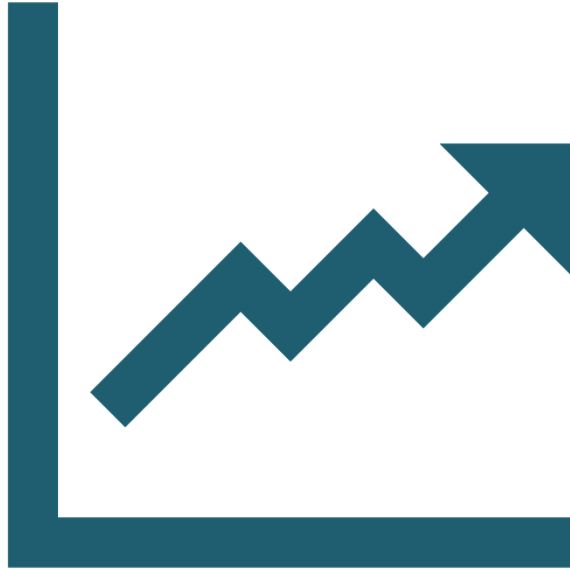
التحليل الذكي للأعمال Business Intelligence

تحليل الماضي لتحسين المستقبل

وضع أطر لإدارة الأداء لتحديد المؤشرات
الرئيسية وتتبعها وتوفير التحليل الذكي
للأعمال.

Maturity Model





Key Performance Indicators

Examples of Health and Safety KPIs

Monthly Health and Safety Prevention Costs

Productive Days %

% of Management Trained in Health & Safety

Average Time To Resolution of Risks & Issues

Lagging indicators

Injuries and work-related ill health in terms of LTIs, Lost Time Incident Frequency (Rate) (= number of lost-time injuries x 1,000,000 divided by total hours worked in the accounting period);

Production days lost through sickness absence (% of total work days lost by sickness absence);

Incidents or near misses (including those with the potential to cause injury, ill health, or loss);

Complaints about work that is carried out in unsafe or unhealthy conditions;

number of **early retirements**.

- ve

The **percentage of productive planned work days realised** (i.e. 97% productive work days as opposed to 3% sickness absence);

The **number of hours worked** (by the total work force) without lost time injury;

The **number of working days since** the last accident;

Employee satisfaction (survey).

+ ve

Leading indicators

% of **managers** with adequate OSH **training**;

% of **workers** with adequate OSH **training**;

% of management **meetings** wherein OSH is addressed;

% of **management-worker meetings** wherein OSH is addressed;

of management **visits** to the shop floor where OSH is addressed;

% of **business partners** (suppliers, contractors, etc.) evaluated and selected on the basis of their OSH performance or a widely accepted OSH certificate;

of workplace **inspections** or scores of workplace inspection systems such as ELMERI or TR Observation;

frequency of (observed) (un)**safe behaviour**;

of OSH **audits** performed;

% of OSH **projects/activities** that are finalised **on time**;

% of OSH **suggestions or complaints** where feedback is given to those reporting within two weeks;

of 'precursors' or '**early warnings**' recognised (that precede serious safety problems');

prevalence of certain **health problems**, e.g. as outcomes of health checks or health surveillance;

Work Ability Index (predicting the likelihood of early retirement);

safety climate (survey).

leading indicators should

Allow you to see small improvements in performance

Measure the positive: what people are doing versus failing to do

Enable frequent feedback to all stakeholders

Be credible to performers

Be predictive

Increase constructive problem-solving around safety

Make it clear what needs to be done to get better

Track impact versus intention

Economic indicators

costs associated with lost time injuries

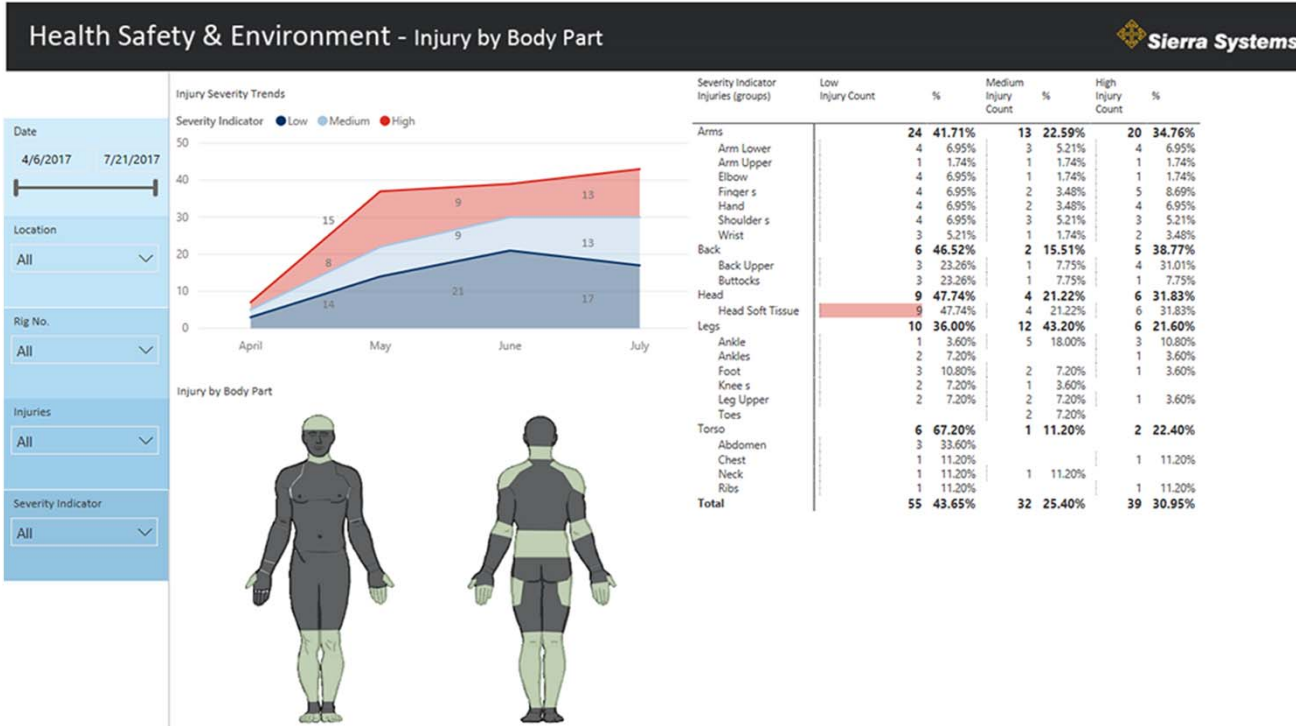
- material damage
- loss of production time due to the injury

The percentage of sickness absence

- cost of hiring a temporary replacement
- claims from insurers


لوحات مؤشرات الأداء

HSE Injury by Body Part




<https://powerbi.microsoft.com/en-us/partner-showcase/sierra-systems-health-safety-environment-hse/>

HSE by Geography

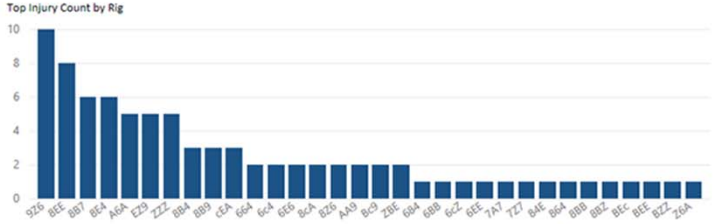
Health Safety & Environment - Injury by Geographic Location


	Location and Rig	Arms	Back	Head	Legs	Torso
Date 4/6/2017 7/21/2017	Brooks, AB	2	1	2		1
	844	1	1	1		
	848					
	84c	1		1		
Location All	8c8					1
	Caroline, AB	4	1	1		
	488	1				
Rig No. All	4A2	3	1	1		
	Drumheller, AB	1	2		3	
	6E7				1	
	6Z8		1		1	
Injuries All	AEB	1			1	
	E96		1		1	
	Eagle Plains, YK	4			3	1
	4A9	1				
Severity Indicator All	4AA	2			2	
	6A7	1				
	8cE				1	1
	Edmonton, AB				1	1
	ZE9				1	
	Fort McMurray, AB		1		3	
	8E4		1		3	
	Fort Nelson, BC	6	3	3	3	1
	6c4				1	
	6c2	1				
	7A7		1			
	884	1			1	1
	888	1				
	88Z	1				
	AA9		1	1		
	BEE	1				
	Z6A		1			
	Z9E			1	1	
	ZZZ	1				
	Fort St. John, BC	6	1	2	5	2
	887	3			2	1
	889	1	1	1		
	Total	57	13	19	28	9

Top Injury Count by Rig



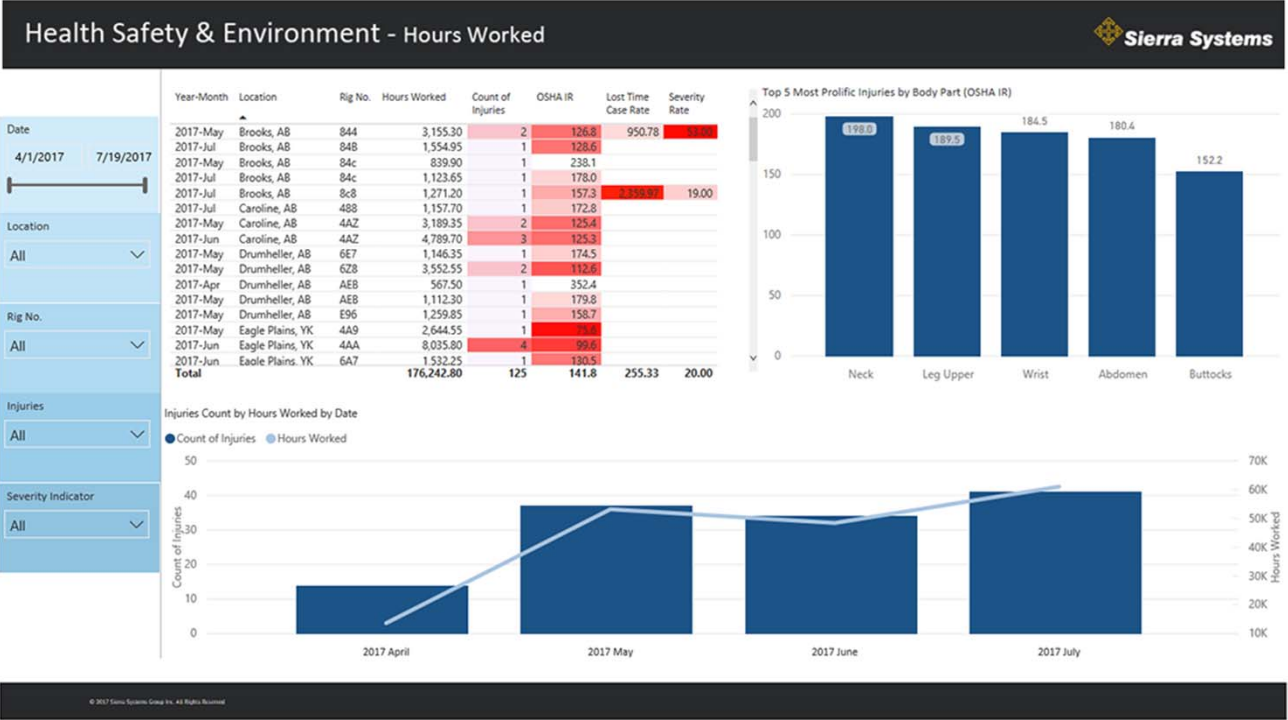
Top Injury Count by Rig

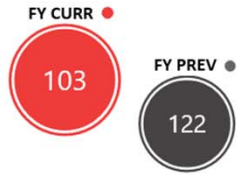


Rig	Injury Count
926	10
BEE	8
BB7	6
BE4	6
AGA	5
EZ9	5
ZZZ	5
BB4	4
BBP	3
6EA	3
6c4	3
6E5	2
6cA	2
EZ9	2
AA9	2
8c9	2
Z9E	2
6A7	2
888	1
6c2	1
BE7	1
TZ7	1
6AF	1
8cA	1
88B	1
BBZ	1
BEE	1
BZZ	1
Z6A	1

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HSE by Hours Worked

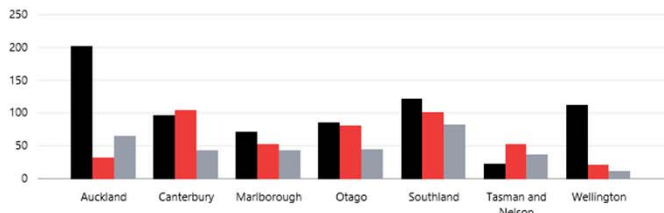
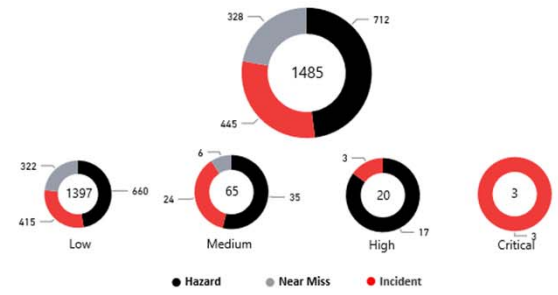




Health and Safety Dashboard



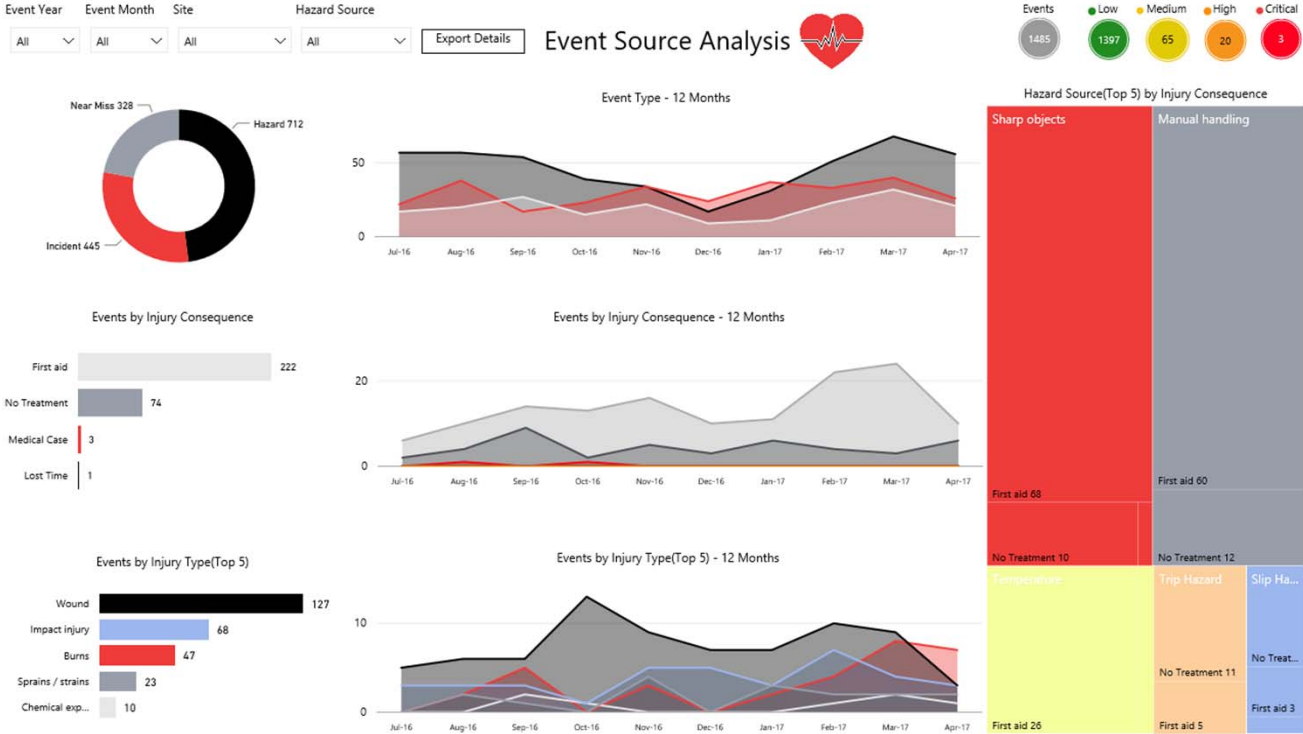
Event Classification Breakdown



Safety Consequence



Event Source Analysis

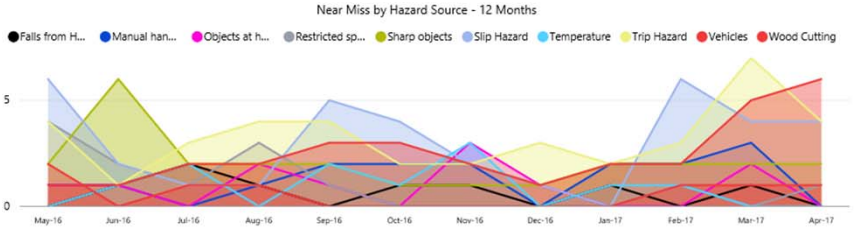
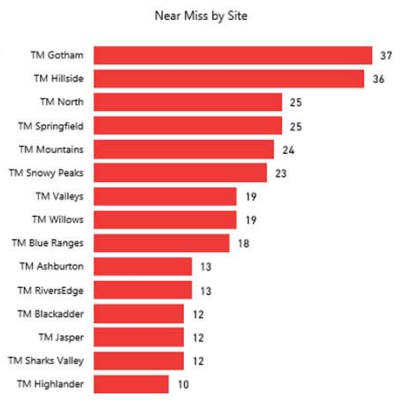
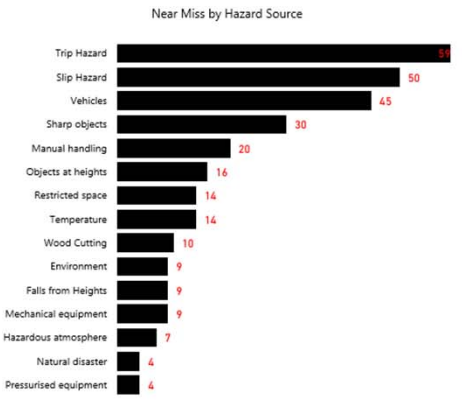


Near Miss Analysis

Incident Year: All | Incident Month Site: All | Hazard Source: All | Export Details

Near Miss Analysis

Near Miss: 328 (Low: 322, Medium: 6, High: 0, Critical: 0)



<https://powerbi.microsoft.com/en-us/partner-showcase/theta-systems-limited-health-and-safety-dashboard/>

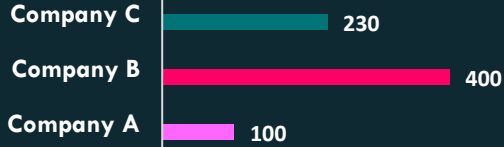


Date: **June 11, 2020**

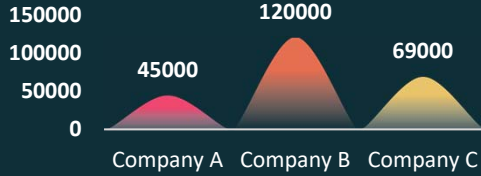
HSE Monthly Dashboard



Total Manpower **730**



Total Manhours **234000**



Lost Time Injuries Frequency (LTIF)



Unsafe Acts /Conditions **445**



Positive

150

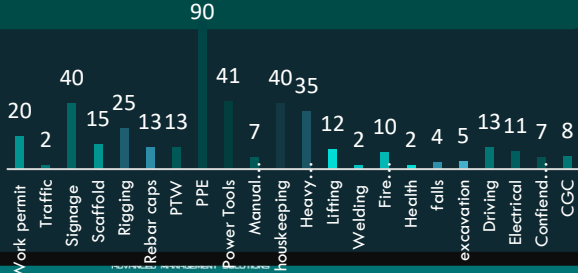


Negative

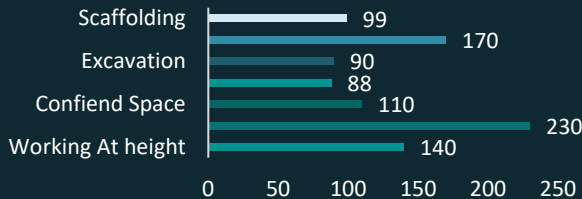
245



Safety Observation **415**
Headline Error 90



Training hours **927**



Severity (S)





Date :

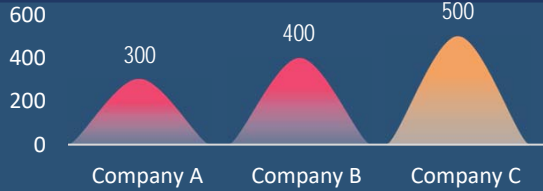
June...

HSE Monthly Dashboard



Total Manpower

1200

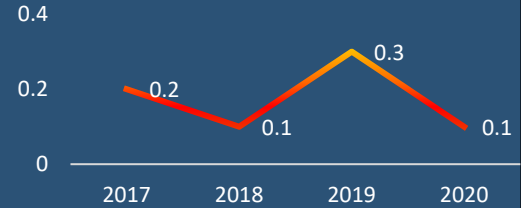


Total Manhours

360...



Lost Time Injuries Frequency (LTIF)



Unsafe Acts/Conditions

5...



Positive

3...



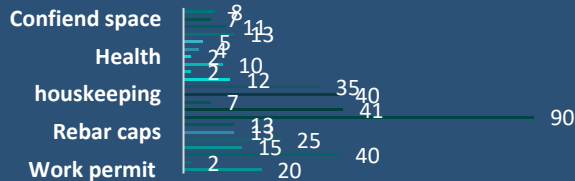
Negative

2...



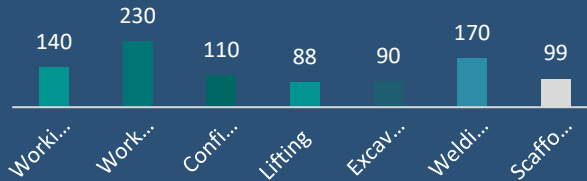
Safety Observations

545

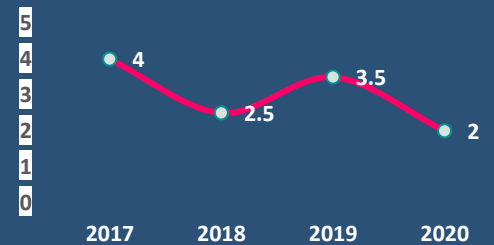


Training Hours

927



Severity (S)



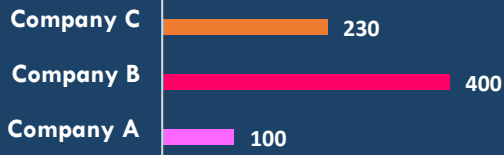


Date **June 11, 2020**

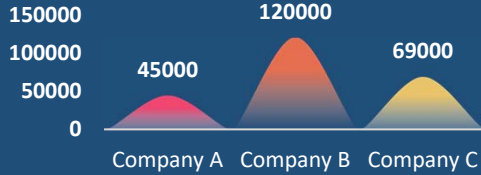
HSE Monthly Dashboard



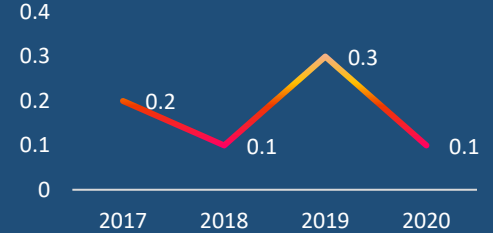
Total Manpower **730**



Total Manhours **234000**



Lost Time Injuries Frequency (LTIF)



Unsafe Acts /Conditions **445**



Positive

150



Negative

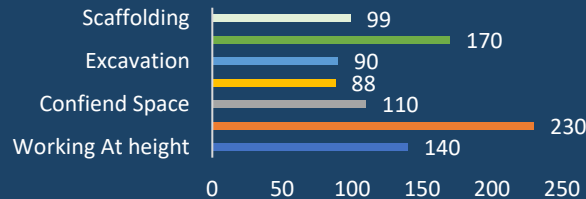
245



Safety Observation **448**
Trending Error



Training hours **927**



Severity (S)



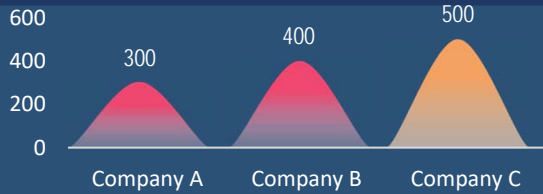


Date : June...

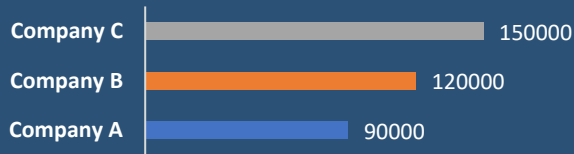
HSE Monthly Dashboard



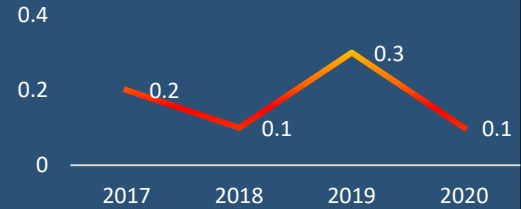
Total Manpower **1200**



Total Manhours **360...**



Lost Time Injuries Frequency (LTIF)



Unsafe Acts/Conditions **5...**



Positive

3...

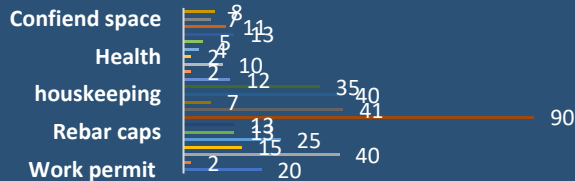


Negative

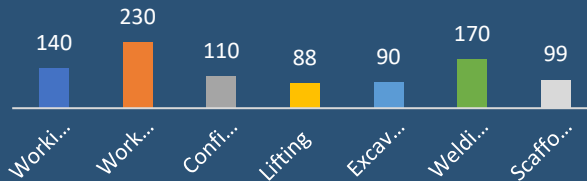
2...



Safety Observations **545**

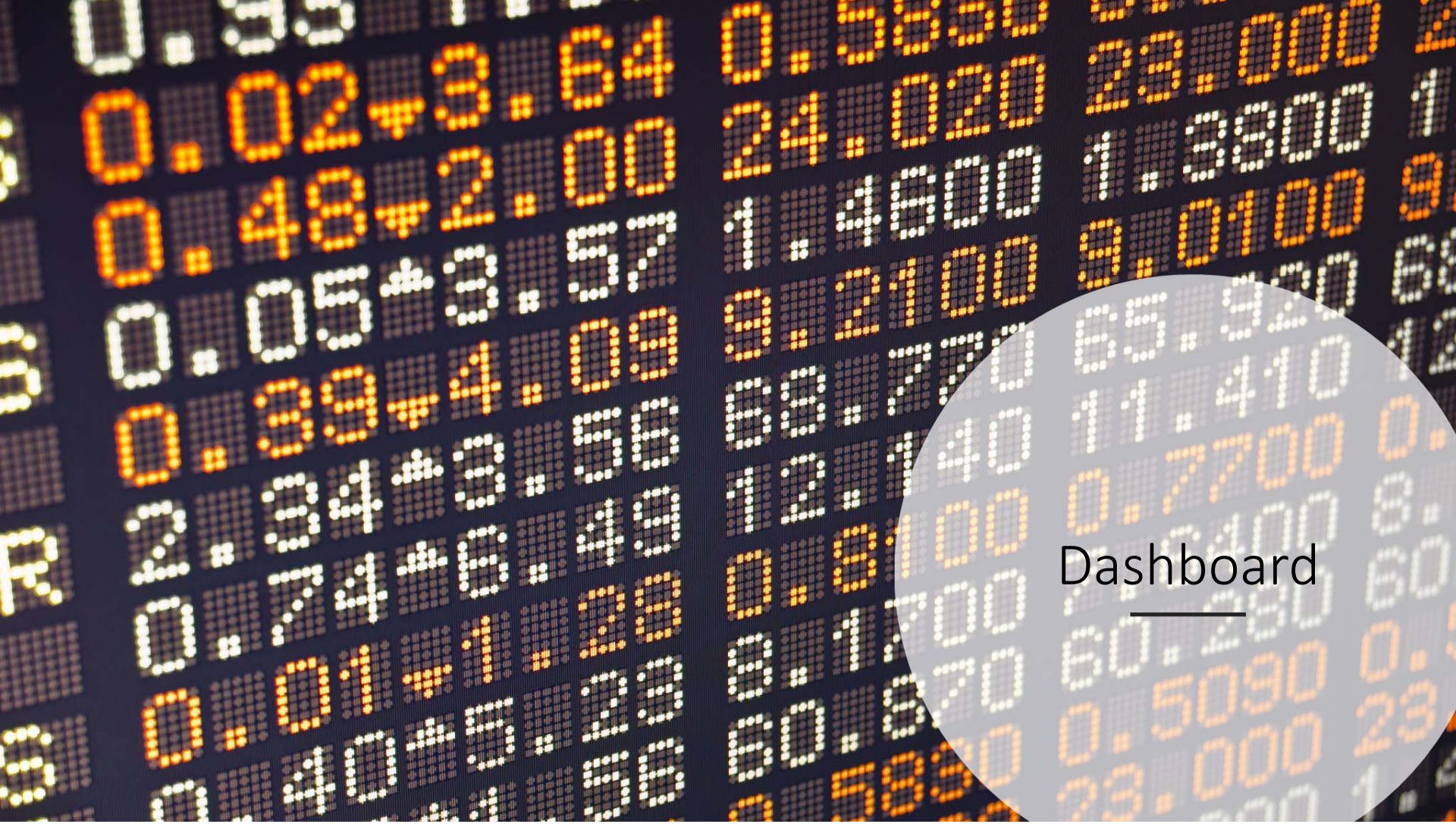


Training Hours **927**



Severity (S)





Dashboard

Business Intelligence أشهر برامج التحليل الذكي للأعمال

SAP Business Intelligence

Oracle BI

Microsoft Power BI

MicroStrategy

Datapine

SAS Business Intelligence

Yellowfin BI

QlikSense

Zoho Analytics

Sisense

Looker

Clear Analytics

Tableau

Domo

IBM Cognos Analytics

Magic Quadrant for Analytics and Business Intelligence Platforms

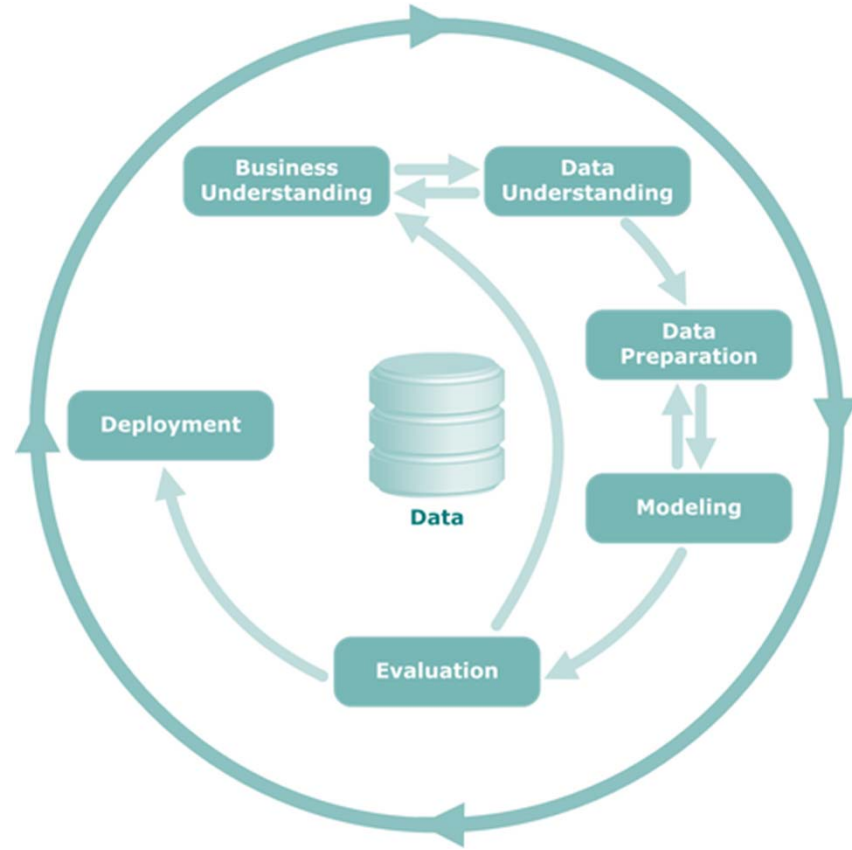
Source: Gartner (February 2021)



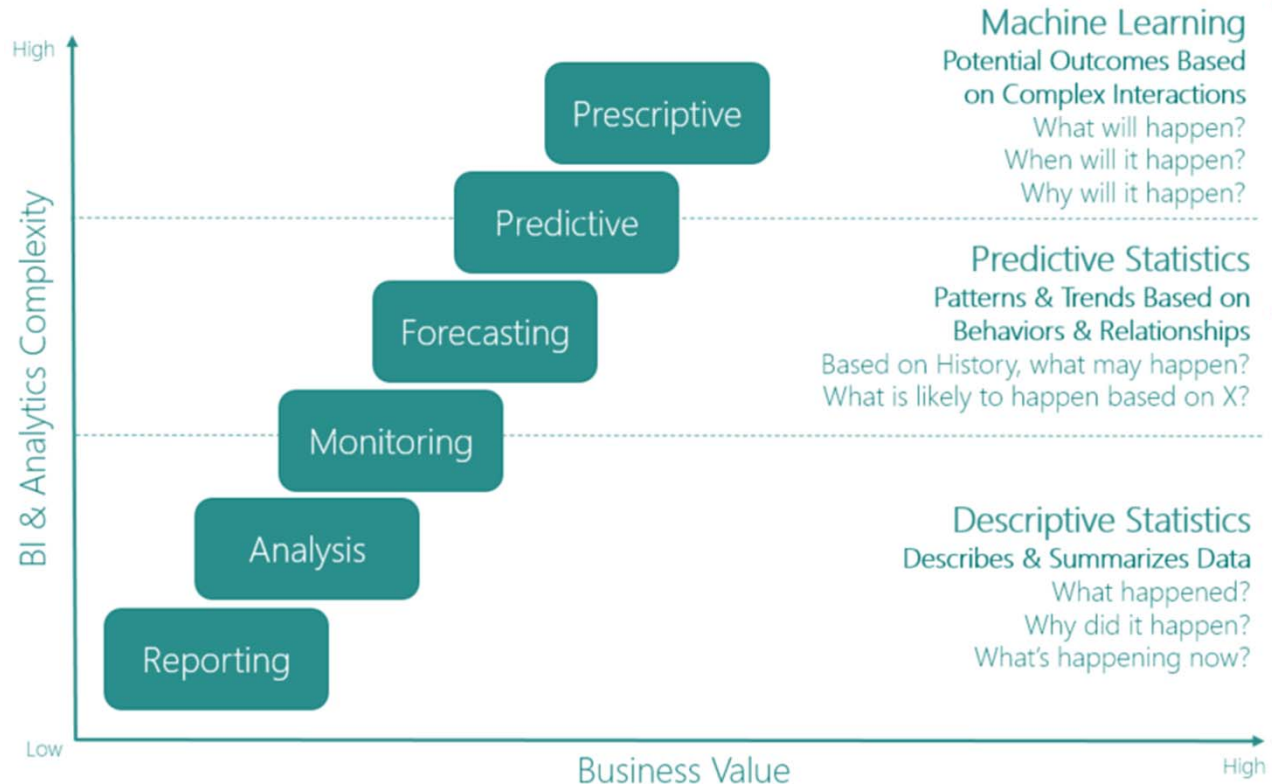
© Gartner, Inc

تجربة عملية

How to start



Maturity Model





MACHINE LEARNING

تعلم الآلة

Process architecture for a solution



COGNITIVE
SERVICE



MACHINE
LEARNING



DEEP
LEARNING



NEURAL
NETWORK

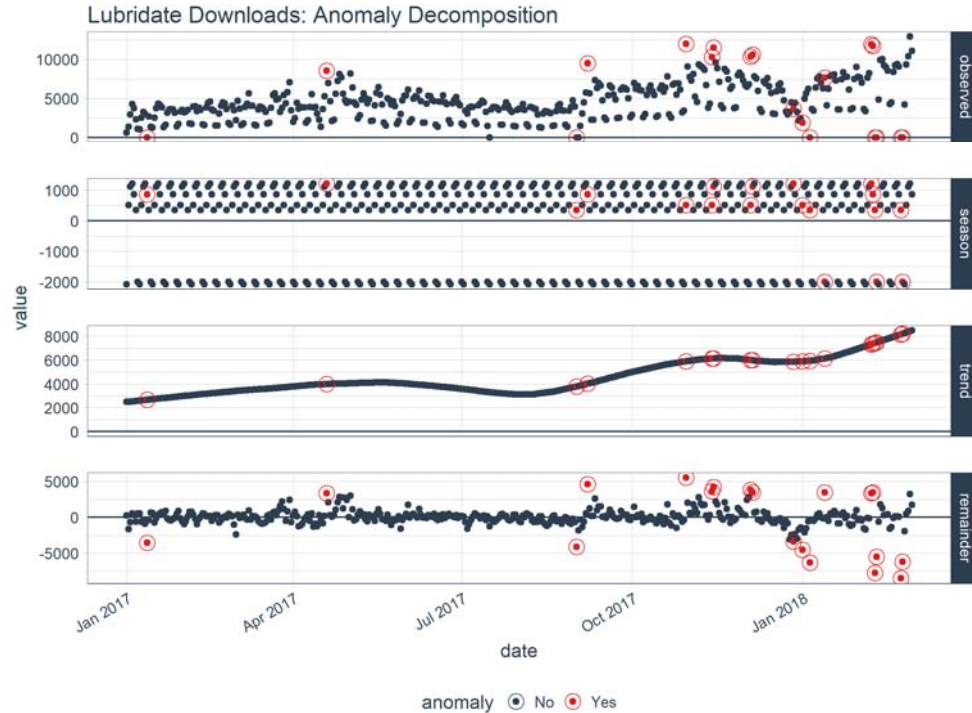
Cognitive APIs

Vision APIs	Speech APIs	Search APIs	Language APIs	Decision APIs
Computer Vision	Speech Services	Autosuggest	Text Analytics	Content Moderator
Form Recognizer	Speaker Recognition	Entity Search	Translator Text	Anomaly Detector
Ink Recognizer		Image Search	QnA Maker	Personalizer
Face		Custom Search	LUIS	
Video Indexer		News Search	Video Indexer	
Custom Vision Search		Spell Check		
		Video Search		
		Visual Search		
		Web Search		
		Local Business Search		

أهداف الذكاء الاصطناعي

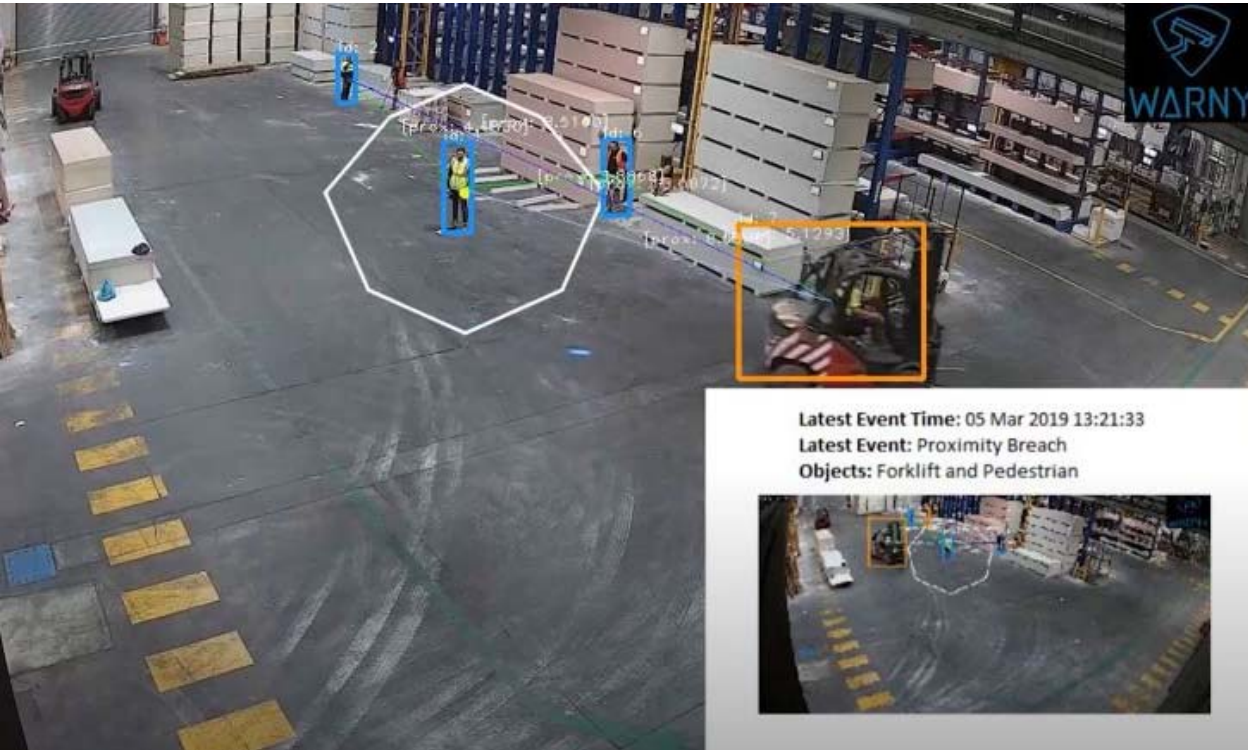


Machine Learning For Anomalies Detection For Emission Tracking



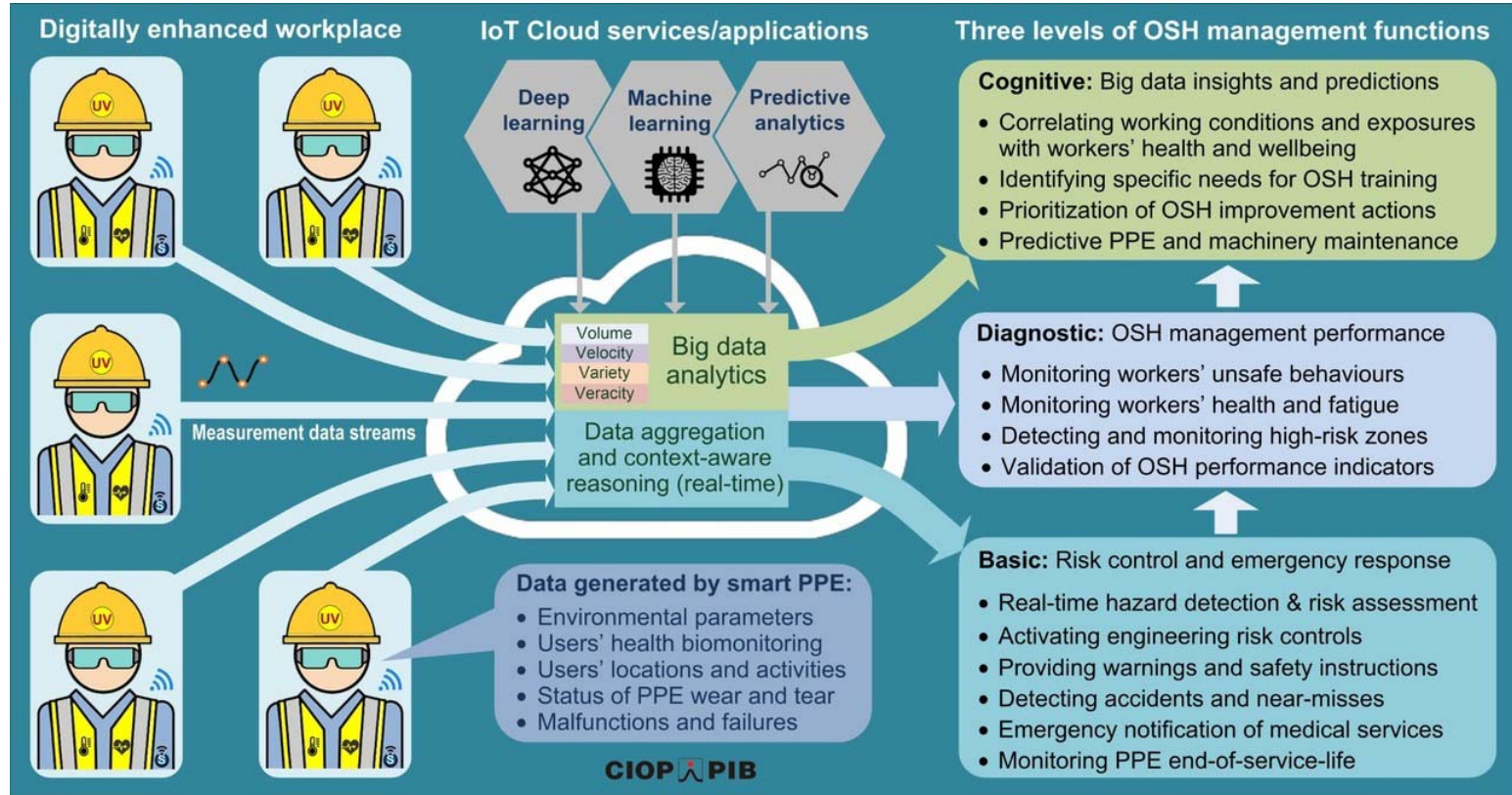
Computer Vision And Machine Learning For Personal Protective Equipment Monitoring





Computer Vision And Machine Learning For Personal Protective Equipment Monitoring

Big Data analytics can facilitate future safety and health management



Deployment

Corporate / District

CEO

School

School manager

School manager

Managers

Admin manager

Manager

Department Manager

Department Manager

Sup and Staff

Unit head

Staff

Unit head

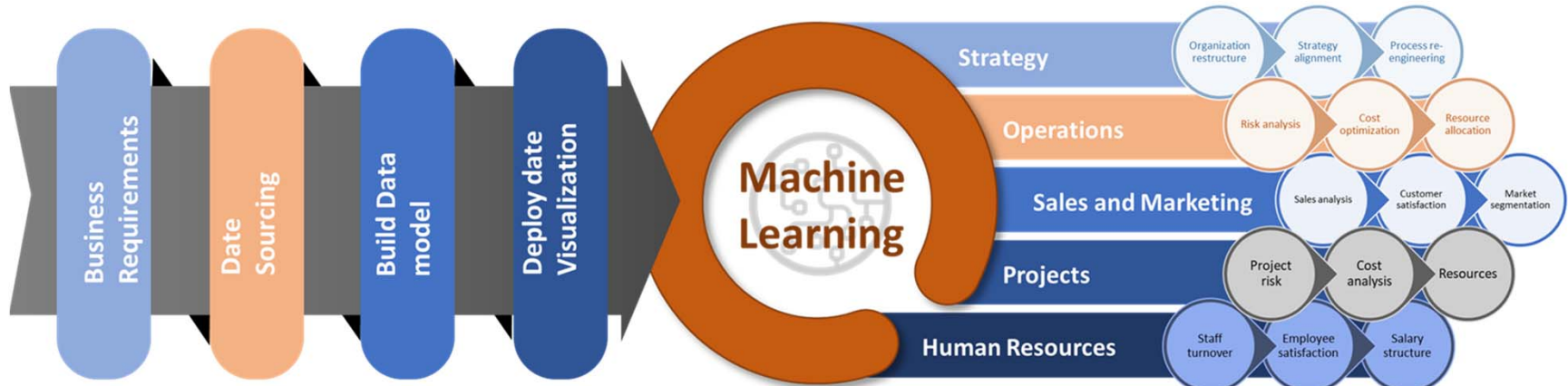
Staff

Unit head

Staff

RACI Example

Actions for the Focus Area	Roles and Responsibilities						
	Rita	Bob	Sue	Tom	Dick	Harry	Sally
Strategic Plan	R+A	I	CA	I	I	I	I
Leadership Development	R+A	C	CA	I	I	I	I
External Masterclasses	R+A	I	CA	CA	I	I	I
Commissioning external consultants	R+A	C	I	CA	I	I	I
Strategic Measurement	R+A	I	-	I	I	I	I
Professional Development	R+A	C	-	I	I	I	I/C
Change Agent Programme	R+A	I	CA	I	I	I	I



Information wealth model

<https://www.amsol.ca/service/business-intelligence-consulting/>

Information wealth model



علاء عبد الهادي استشاري في شركة الحلول المتقدمة للإدارة بكندا

عمل م. علاء في استشارات تطوير الاستراتيجيات واعاده الهيكلة وتطوير الموارد البشرية وحلول المعلومات وتحليل البيانات في عدد من شركات البترول والهيئات الحكومية والشركات الخاصة والشركات الهندسية بالإضافة الي الجمعيات غير الهادفة للربح كما وعمل في عدد من الشركات الاستشارية العالمية

قام المهندس علاء بتقييم الشركات في جائزه دي للموارد البشرية

حصل م. علاء على ماجستير في اداره الاعمال من جامعه ماسترخت في هولندا و شهاده متخصص في الموارد البشرية من جامعه مينيسوتا وشهاده متخصص في تحليل البيانات من جامعه دوق وكان المهندس علاء عضو مجلس اداره في جمعيه العربية لإدارة الموارد البشرية لمدة ثمان سنوات بالإضافة الى عضويته في العديد من الجمعيات المتخصصة

ALAA ABDULHADY

Managing Partner Advanced Management Solutions



PROFESSIONAL EXPERIENCE

Developed short and long-term strategy, initiatives and key performance indicators for organization structure for petrochemical construction company resulting in new strategy

Assessed and coached leaders on organization in manufacturing, construction and publishing industries

Developed organization structure for Makkah high commission authority

More than 30 years in managing, developing and implementing application at various industries include Financial, Military, Oil and Gas, Human Resources, Government and Engineering.

Certification

Certified IBM Artificial intelligence engineer

Certified IBM Artificial intelligence professional engineer

Certified Strategic Planning and Performance Management Expert (SPPME) from Performance Institute at Arlington, VA

EDUCATION

Advanced Business Analytics Specialization from *University of Colorado Boulder*

Human Resources management from *Carlson School of Management at University of Minnesota*

Data Analysis and Presentation Skills: the PwC Approach from *PWC*

Business Metrics for Data-Driven Companies from *Duke university*

Masters of Business Administration with Distinction – Strategy Management from *Maastricht School of Management, Maastricht, Netherlands*

Engineering Bachelor's Degree from *Alexandria University, Faculty of Engineering, Alexandria, Egypt*

