You can afford the Best

RealiteQ™

New Generation of SCADA & Remote control solutions

IoW – Internet of Water

ERP, Analitics etc.

Operation & Maintenance

Management

aws partner network

RealiteQ

SMART WATER NETWORK
NEW (4TH) GENERATION OF SCADA SYSTEM

By Tidhar Tsuri CEO at ALPASENSE & Ran Kedem – CEO at Reali Technologies Ltd.

REALI TECHNOLOGIES

Reali Technologies Ltd. is a leader and pioneer company in IoT since 2008 and in water and wastewater (IoW – Internet of Water) since 2009, and in USA since 2010 the developer and provider of **RealiteQ – THE MOST ADVANCE SMART WATER NETWORK SOLUSION HOLISTIC**

RealiteQ™
Real Time Remote Control and Monitoring

NEW (4TH) GENERATION OF SCADA

Data Acquisition

Communication & Telemetry

HMI/UI (Visualization)

Data Analytics, trends, graphs...

Real time remote control & Data Management

RealiteQ™

IIoT & Cloud-based comprehensive real time, secured remote-control operation & Data management solution

Now more than ever COVID-19

COVID-19

The coronavirus is everywhere, and it looks like it will take a long time before we will return to our previous life Routine, so we must change our behavior but continue with our life, and it is not trivial...
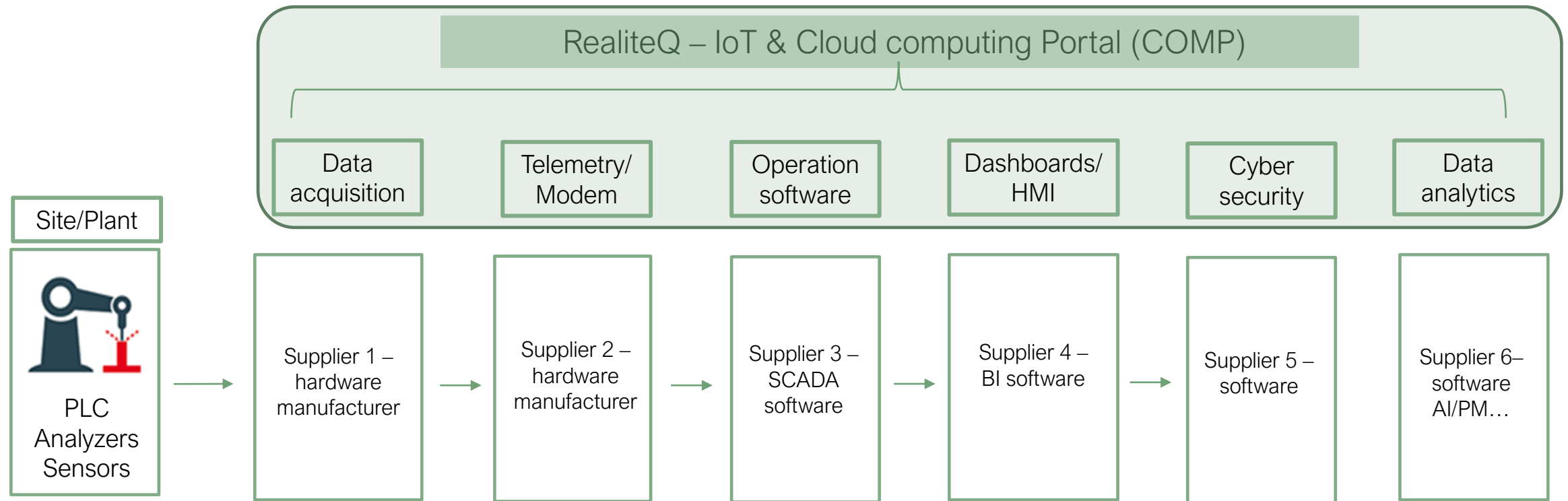
The challenge

To continue to operate facilities/plant and work as usual under the lockdown and the new restrictions, while keeping the employee's safety.

The solution

RealiteQ allows secured remote operation by anyone (authorized) from anywhere (including home), anytime using any device connected to the Internet (PC, Laptop, Tablet, Smartphone).
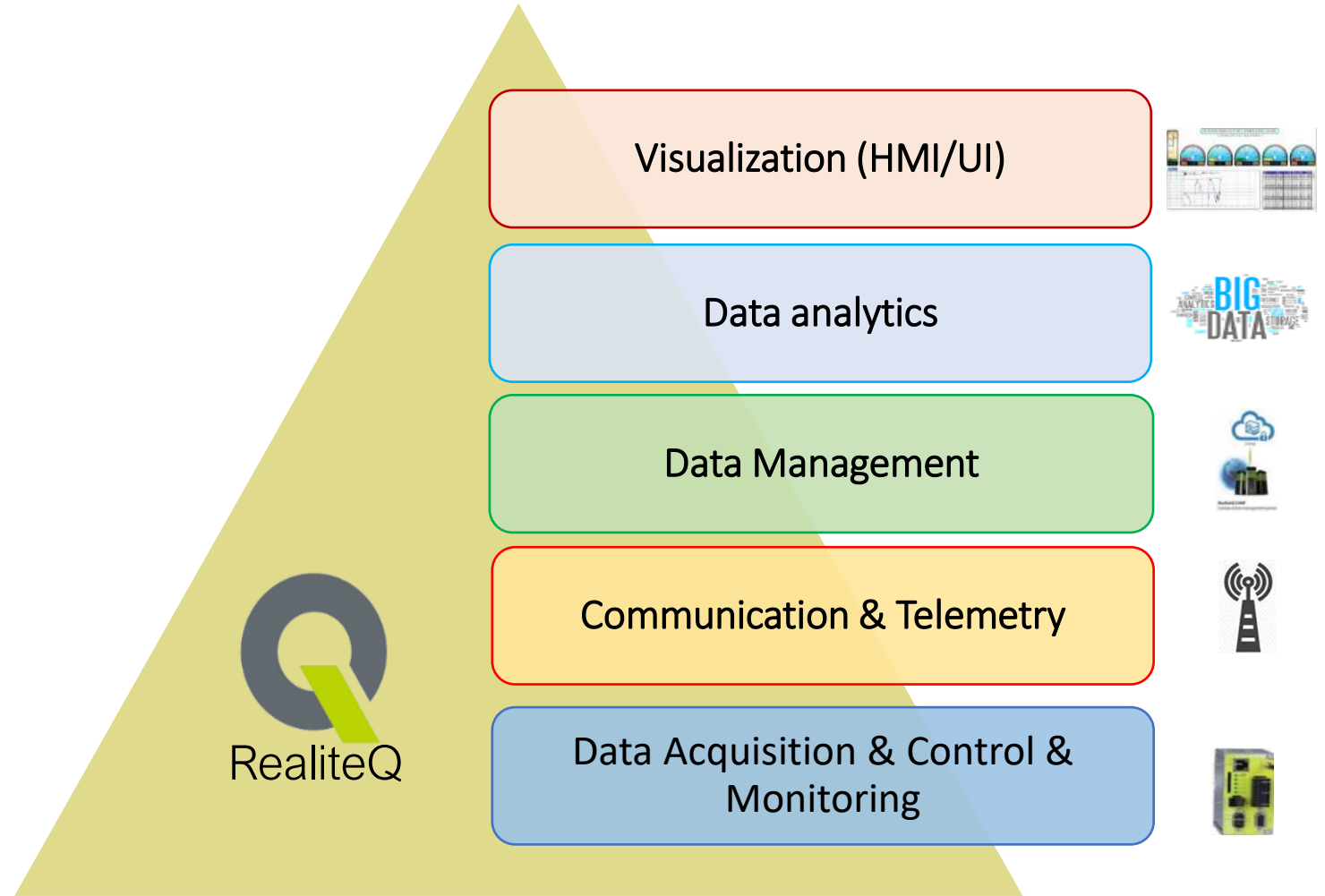
RealiteQ™
Real Time Remote Control and Monitoring

Safety - Security - Integrity

RealiteQ Uniqueness

RealiteQ – IoT & Cloud computing Portal (COMP)

Data acquisition	Telemetry/ Modem	Operation software	Dashboards/ HMI	Cyber security	Data analytics

Site/Plant

PLC
Analyzers
Sensors

Supplier 1 – hardware manufacturer	Supplier 2 – hardware manufacturer	Supplier 3 – SCADA software	Supplier 4 – BI software	Supplier 5 – software	Supplier 6– software AI/PM…

RealiteQ™
Real Time Remote Control and Monitoring

Single source – Holistic solution
Hardware & SaaS

RealiteQ™
Real Time Remote Control and Monitoring

MUCH MORE THAN JUST SCADA

DATA MANAGEMENT FROM "A" TO "Z"

Visualization (HMI/UI)

Data analytics

Data Management

Communication & Telemetry

Data Acquisition & Control & Monitoring

RealiteQ

According to market reports ~90% of the organization Data is not used! With RealiteQ all the data is managed and easily accessible by any authorized employ according to his specific authorization
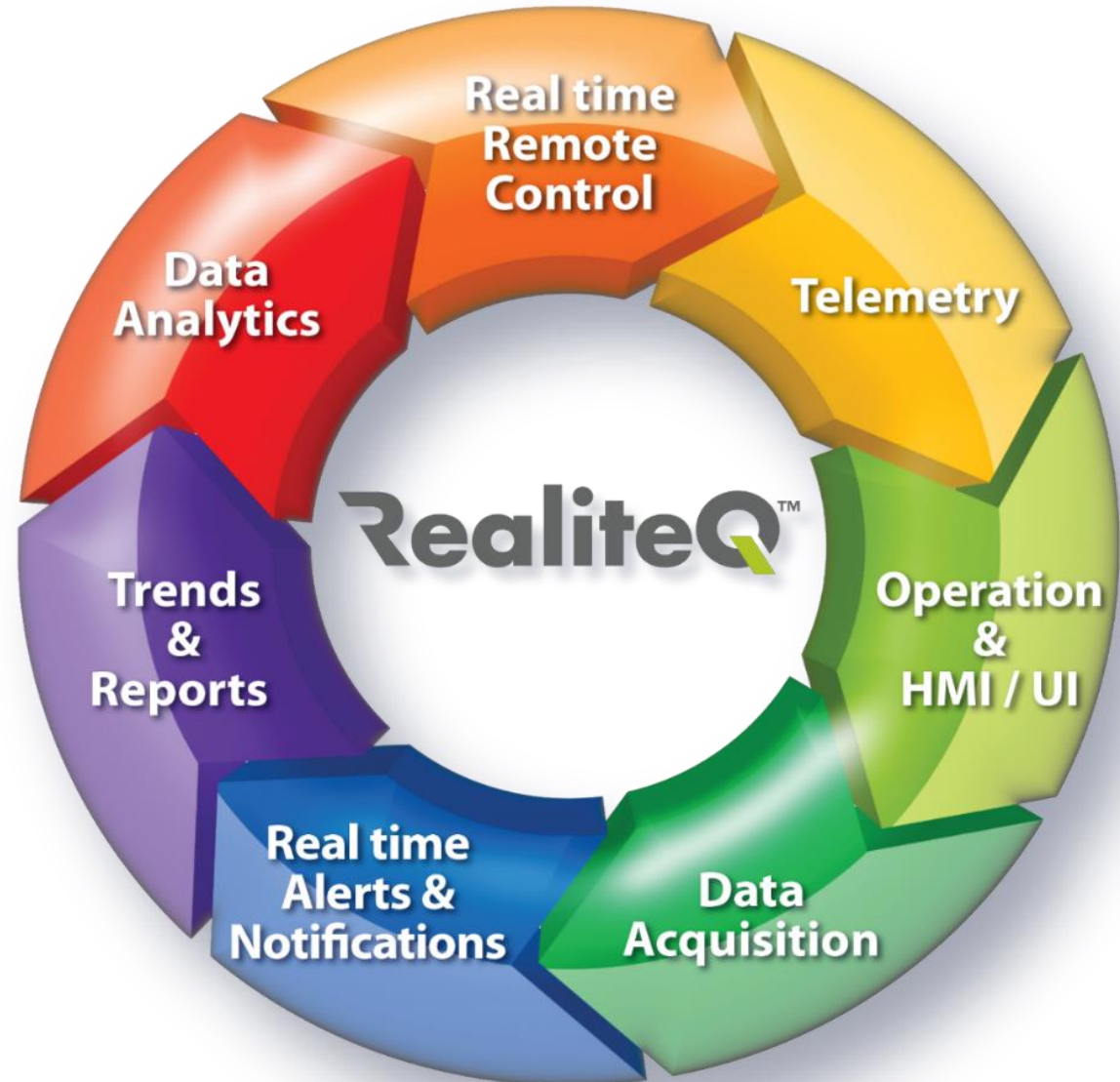
"ALL IN ON"

integrates information technology (IT) with operational technology (OT) and offer significant benefits along the four strategy operative dimensions:

- Costs
- Quality
- Speed
- Reliability

RealiteQ™
Real Time Remote Control and Monitoring

RealiteQ™

Real time Remote Control

Telemetry

Operation & HMI / UI

Data Acquisition

Real time Alerts & Notifications

Trends & Reports

Data Analytics

RealiteQ Architecture

ICEX - On site Data Producer. Explores sensors, analyzers, controllers etc. Support 3 different Protocols in parallel

Data Producer (Icex)

Public / Private

OPC

Costumer software

Local HMI , ERP, MES, AI, BI, PM...

MCP/HTTPs

Comp

Ethernet

HTTPs

PLC

RS – 232/485

RealiteQ (UI/HMI)

Browser based (HTML5) User Interface/HMI

Analog & Digital I/O

RealiteQ COMP

Sensors

RealiteQ UI
PC, laptop, tablet, smart phone

COMP - Central Online Management Portal
Mediates all communication, defines security and user permissions, manages the Historian, streams live data and sends Alarms notifications.

Analyzers

Any device connected to the internet, anytime, anywhere,

CONNECT IT ALL ON SITE

RealiteQ via its iCex can be connected in parallel to different devices, controllers, analyzers, sensors...
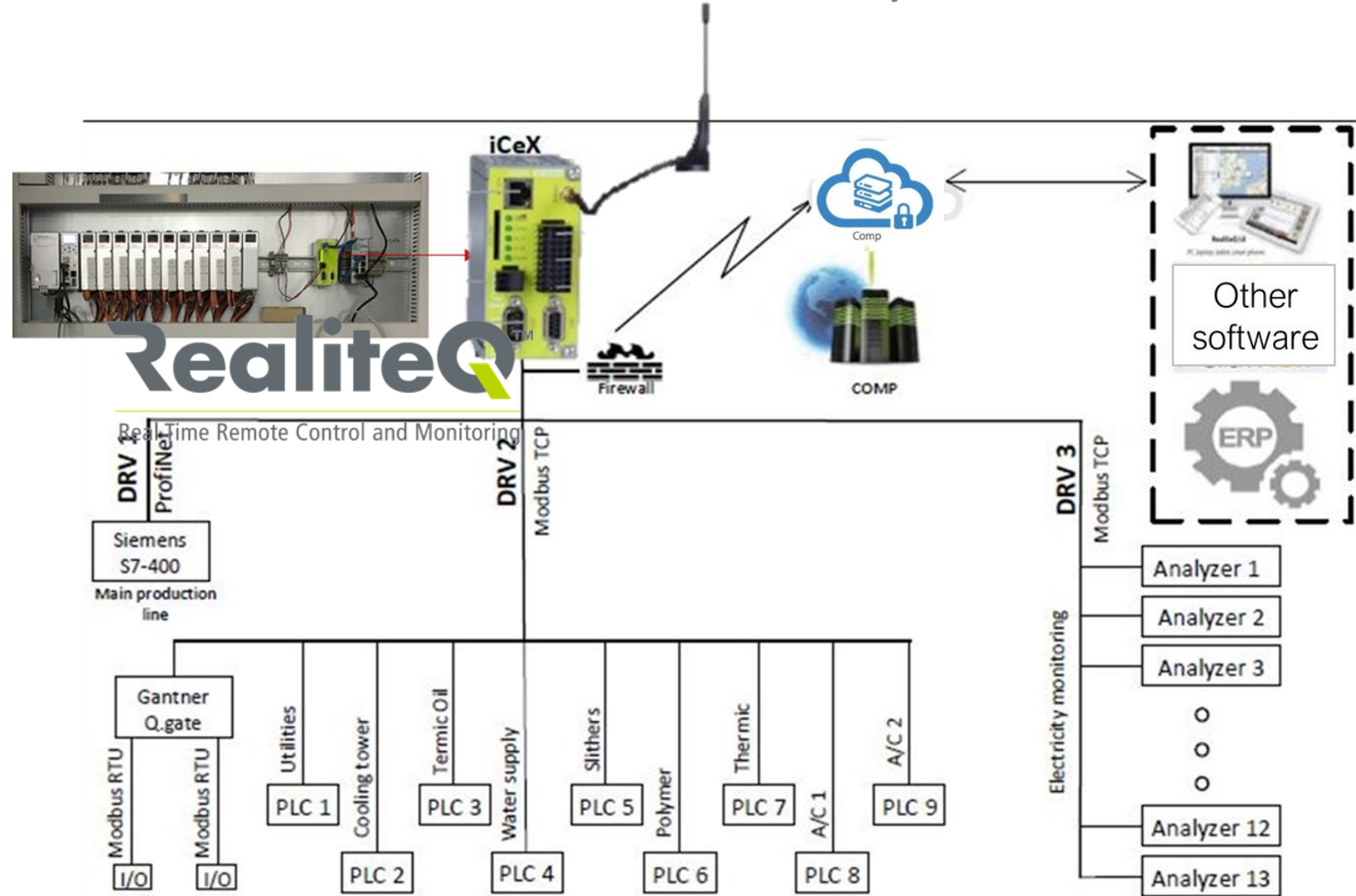
System with no limits

- No limits of users (in or out of the organization)
- No limits of connected sites
- No limitation connected devices
- No limits of data sharing
- No geographical or topographical restrictions

RealiteQ™
Real Time Remote Control and Monitoring

Coordination – collaboration – data sharing

COSTUMER BENEFITS

Reduce risks

&

Increase efficiency

(While doing it with limited resources…)

Risk of ignorance

Not knowing in Real time
what is going on

Risk of ignoring

Ignoring existing
and future
problems

Risk of late response

Late response to
ongoing problems
and crisis events

Common operational risks which you should avoid!

RealiteQ™
Real Time Remote Control and Monitoring

Eliminate those Risks

With RealiteQ you can see (and response) Anything, Anytime, from Anywhere

Collaboration	Coordination	Data Sharing

Common capabilities which should be implement!
In order to increase efficiency

Transparency & accessibility
With RealiteQ anyone (Authorized) can see (and response)
Anything, Anytime, from Anywhere using any device

RealiteQ™
Real Time Remote Control and Monitoring

Costumer benefits

Smart

Simple

Affordable

Although Industry 4.0 technologies are already around for some Years, its adoption and use in operation facilities are still low; and that for three main reasons: Cost, Technology Complexity and security.

"The RealiteQ solution reduces the installation and maintenance costs and simplifies the operation," (F & S) …

- **Cost** - RealiteQ installation and maintenance costs are affordable and fit any size of plant

- **Technological complexity** - RealiteQ required simple, fast & nondestructive installation, easy to use and no special IT infrastructure or capabilities are required.

- **Security Risks** - RealiteQ is a most secure system. it was "built for cyber" solution with many cyber protection layers and means.

SMART WATER NETWORK

RealiteQ™

Real Time Remote Control and Monitoring

Market trends

Market trends - 1

- **"Fourth Generation – Cloud / Internet Based SCADA System…."**

- …" **Cloud-based SCADA dramatically lower the costs** associated with a traditional SCADA system… getting started with a cloud-based SCADA, users can achieve about 90% reduction in costs…"

- …" **Cloud-based SCADA improve the system's reliability**. Cloud computing platform enables water and wastewater utilities to deploy redundancy and disaster recovery capabilities far beyond that found in the typical water and wastewater IT departments…"

Corporate Office
3422 SW 15 Street,Suit #8138,
Deerfield Beach,Florida 33442, USA
Tel: +1-386-310-3803GMT
Tel: +49-322 210 92714
USA/Canada
Toll Free No.1-855-465-4651

Asia Pacific Office
705, B-Wing
Mitha Nagar Society Ltd,
Mitha Nagar, Goregaon (W) Mumbai-
400104 India
Tel: +91-9637589060

Source: 2017 Zion
Market Research

Market trends - 2

- "**The water and wastewater industry is in transition to a digital revolution** that has the potential to transform the industry from innovations such as the **internet of things** and machine learning."

- "...there has been an increased uptake of monitoring and control systems that are able to detect changes **in real-time**..."

- "In the future data-feeds and cognitive **computing could govern water management** and inform every decision in the municipal and industrial sectors"

WATER'S DIGITAL FUTURE

GWi

Market trends - 3

Security

Potential security problems are the most common argument against putting manufacturing systems into the cloud. …

Fortunately, this problem has been worked on for years now, and a properly designed and installed **cloud-based system is no less secure than a system protected by the IT firewall.** Physical data center security, encryption, centrally managed user authentication, and other plant-level network security tools keep these systems safe today.

Cloud service providers must stake their livelihoods on the reliability and security of their systems and therefore **have the latest, cutting-edge defense mechanisms, far more advanced compared to your average IT network**. IT departments still need to protect network entry points as always, but the cloud component of these systems is not the weak link and should not deter you from considering these solutions.

Market trends - 4

Costs

Numerous studies have been done analyzing the short- and long-term economics of cloud computing. As stated in The Economic Benefit of Cloud Computing, "A cloud computing approach <u>could save 50 to 67 percent on the lifecycle cost for a 1,000 server deployment</u>... [delivering] greater investment returns in a shorter payback period when compared to the traditional on-premise delivery option."

And according to AWS, the total cost of ownership (TCO) for cloud computing <u>can offer up 80% cost savings over the equivalent on-premise option</u>

Total Cost of Ownership: Web Applications (Compute and Database) for 3 Years.

REALITEQ - SMART WATER NETWORK

RealiteQ™
Real Time Remote Control and Monitoring
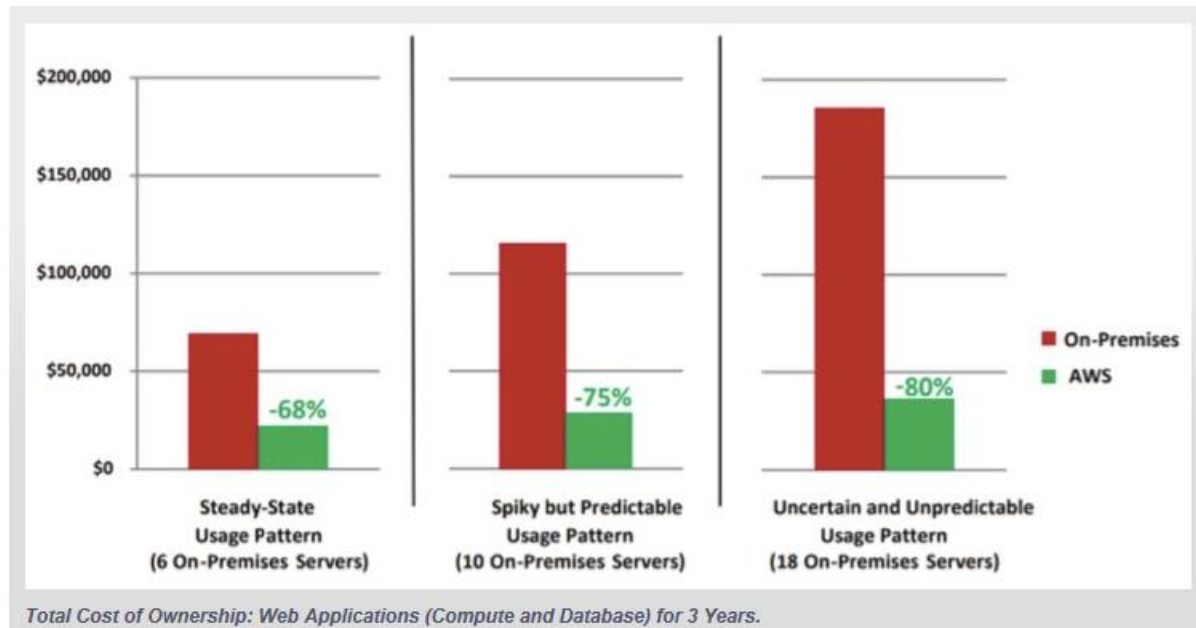
Turn any network to a smart network

Smart water system

Remote monitoring & control

Modular

Agnostic & Hybrid

Real Time 24/7

Safe & secured

Fast & Simple

Affordable

Full communication between different technologies & Sites

Efficient

No communication between different technologies ("tower of Babble")

Smart system

Developed system

Inefficient

Low Technology adaption

Undeveloped system

RealiteQ™

Real Time Remote Control and Monitoring

One integrated system for one water network
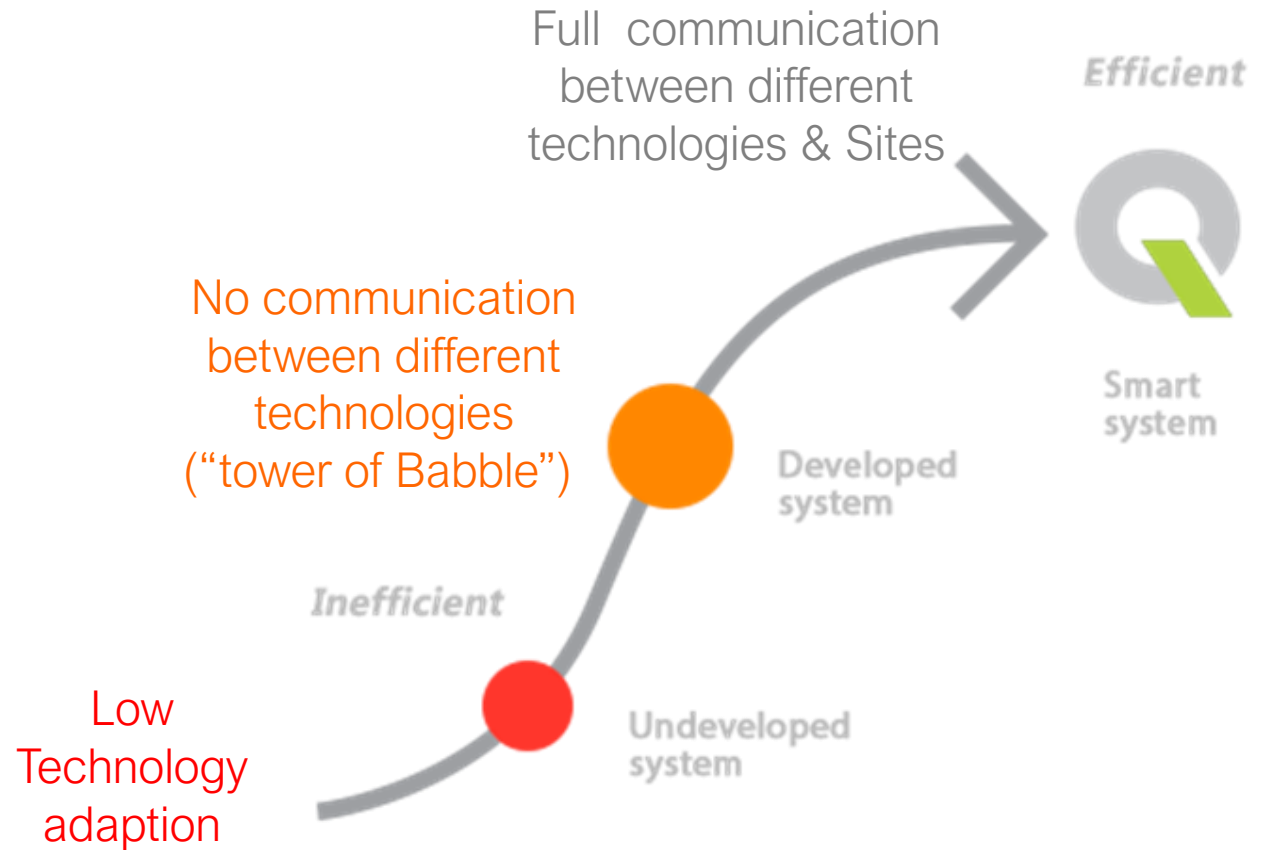
Single Device
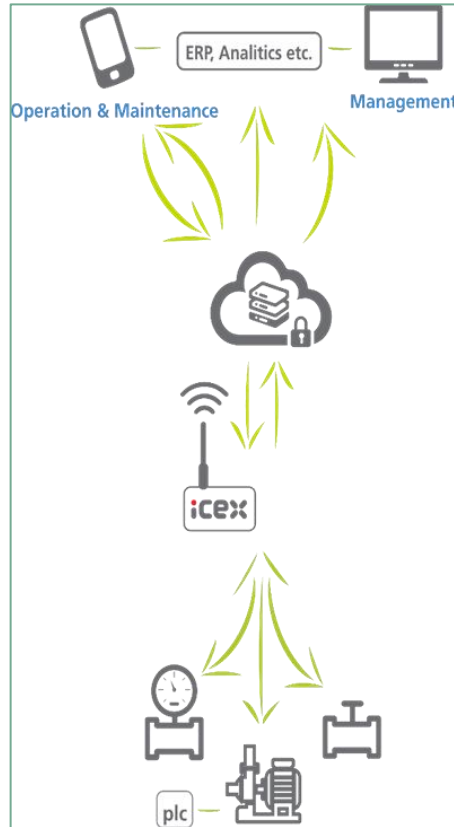
From

To

Entire Site/Network

One integrated system for one water network

Water quality

Pumping station

Distribution control point

Distribution main pipe

Treatment plan managerial Dashboard
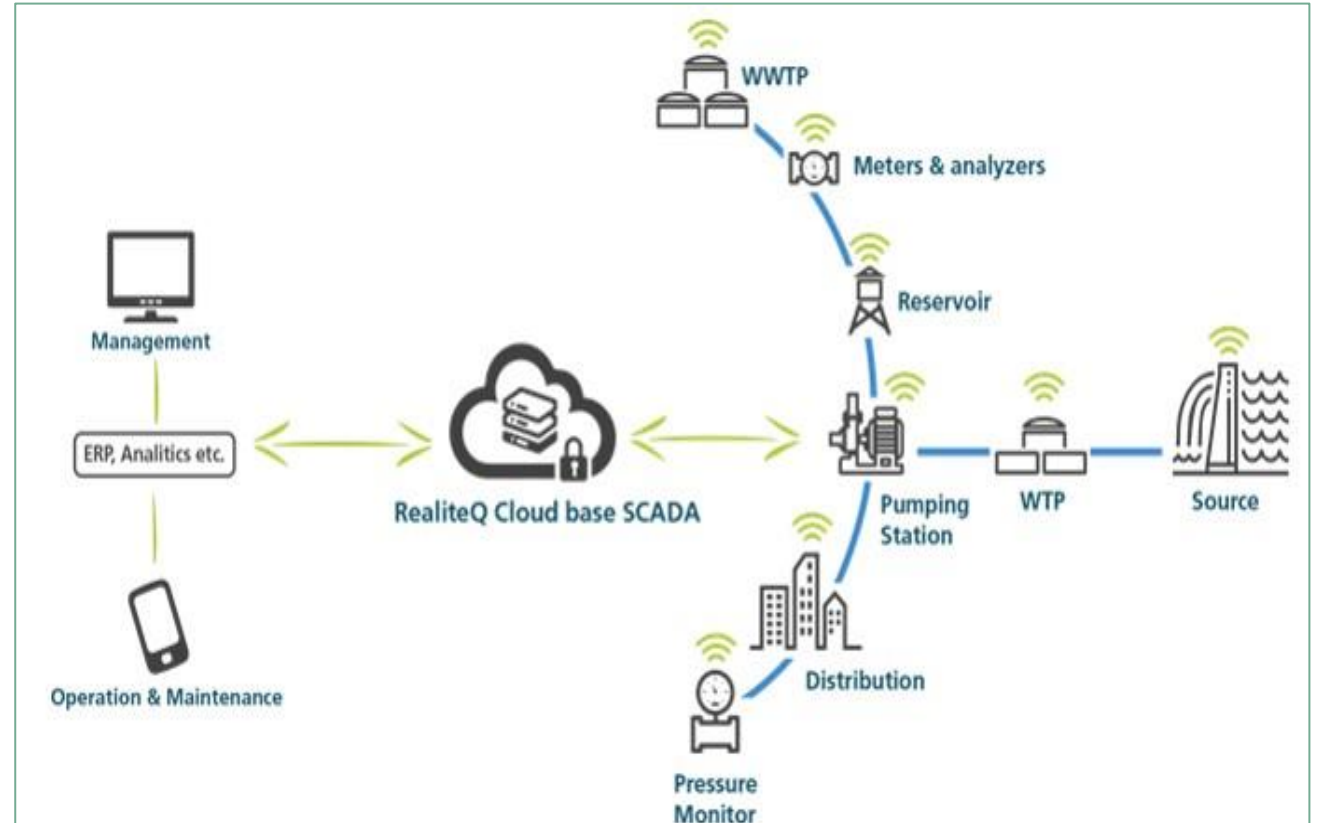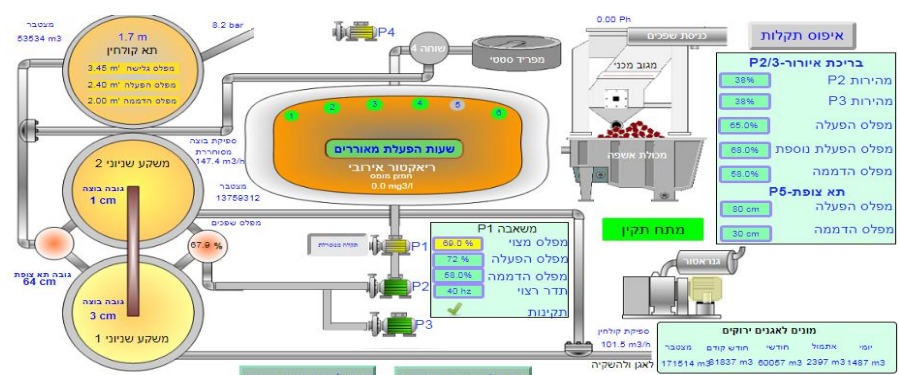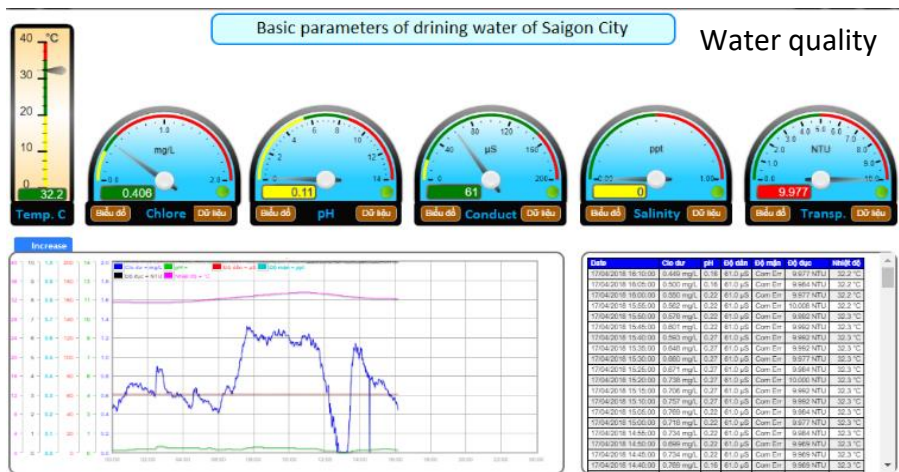
Wastewater Treatment plan operation screen

Reservoir and pumps control
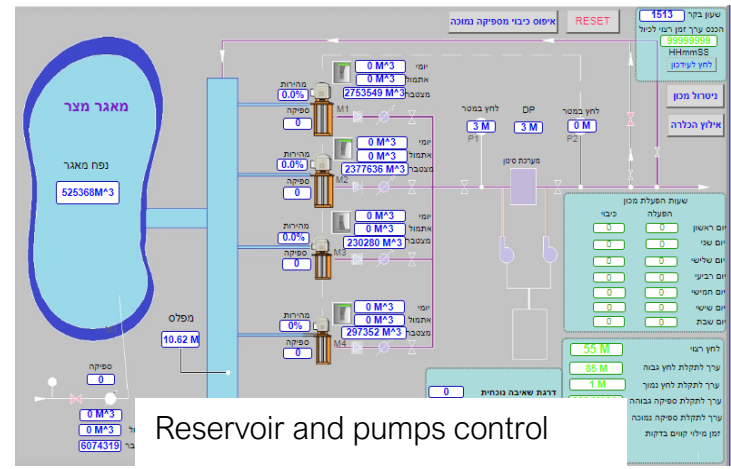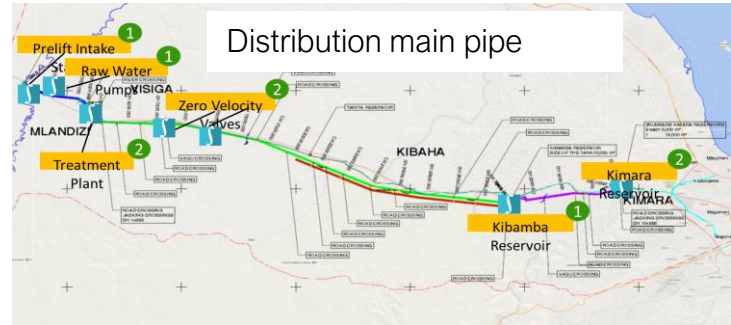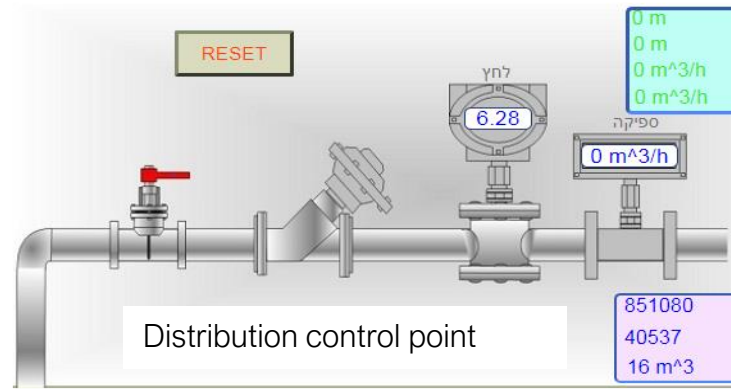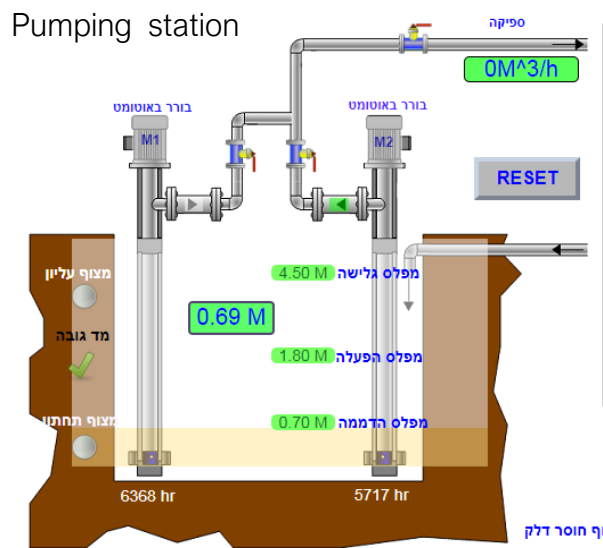
Connect it all in the water network

DATA Analytics, DASHBOARDS, Tables, Reports, TRENDS, FUNCTIONS

| Time	CIA104 WELL - first (uS/cm)	CIA300 PRODUCT - first (uS/cm)	NITRAT 300 - first (ppm)	PH300 WTR to TOWN - first	CL301A CHLOR - first (ppm)	PH400 Waste Conc - first	EDA On - first
2019-04-30 22:15:00	1223	959	53.5	7.57	0.28	6.82	1
2019-04-30 22:30:00	1222	960	53.5	7.58	0.28	6.84	1
2019-04-30 22:45:00	1221	959	53.5	7.57	0.28	6.84	1
2019-04-30 23:00:00	1222	959	53.5	7.58	0.29	6.85	1
2019-04-30 23:15:00	1222	957	53.5	7.59	0.29	6.85	1
2019-04-30 23:30:00	1220	961	53.5	7.57	0.29	6.84	1
2019-04-30 23:45:00	1222	962	53.5	7.60	0.29	6.85	1
2019-05-01 00:00:00	1223	961	53.5	7.61	0.29	6.84	1
Minimum	0	474	0.0	7.49	0.00	6.72	
Maximum	2016	1096	100.7	8.02	0.61	7.06	
Average	1215	965	55.3	7.62	0.28	6.89	
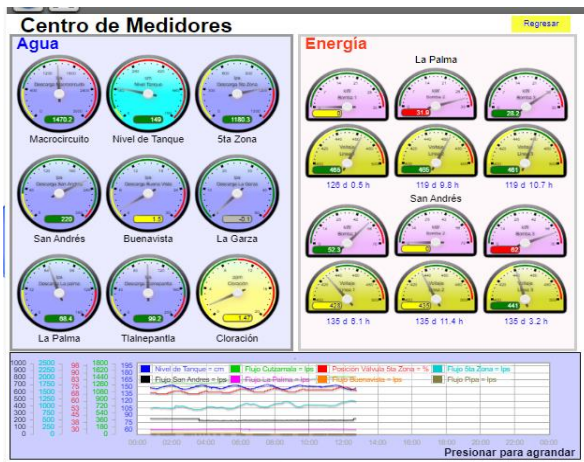
7. func.prev_period_value(ref, period:, mode:)

Calculates historical value for the previous time period given node reference according to given period and mode.

REAL TIME "ASSET HEALTH" STATUS

ELIMINATE THE OPERATIONAL MOST COMMON RISKS:

- Risk of ignorance
- Risk of ignoring
- Risk of late response
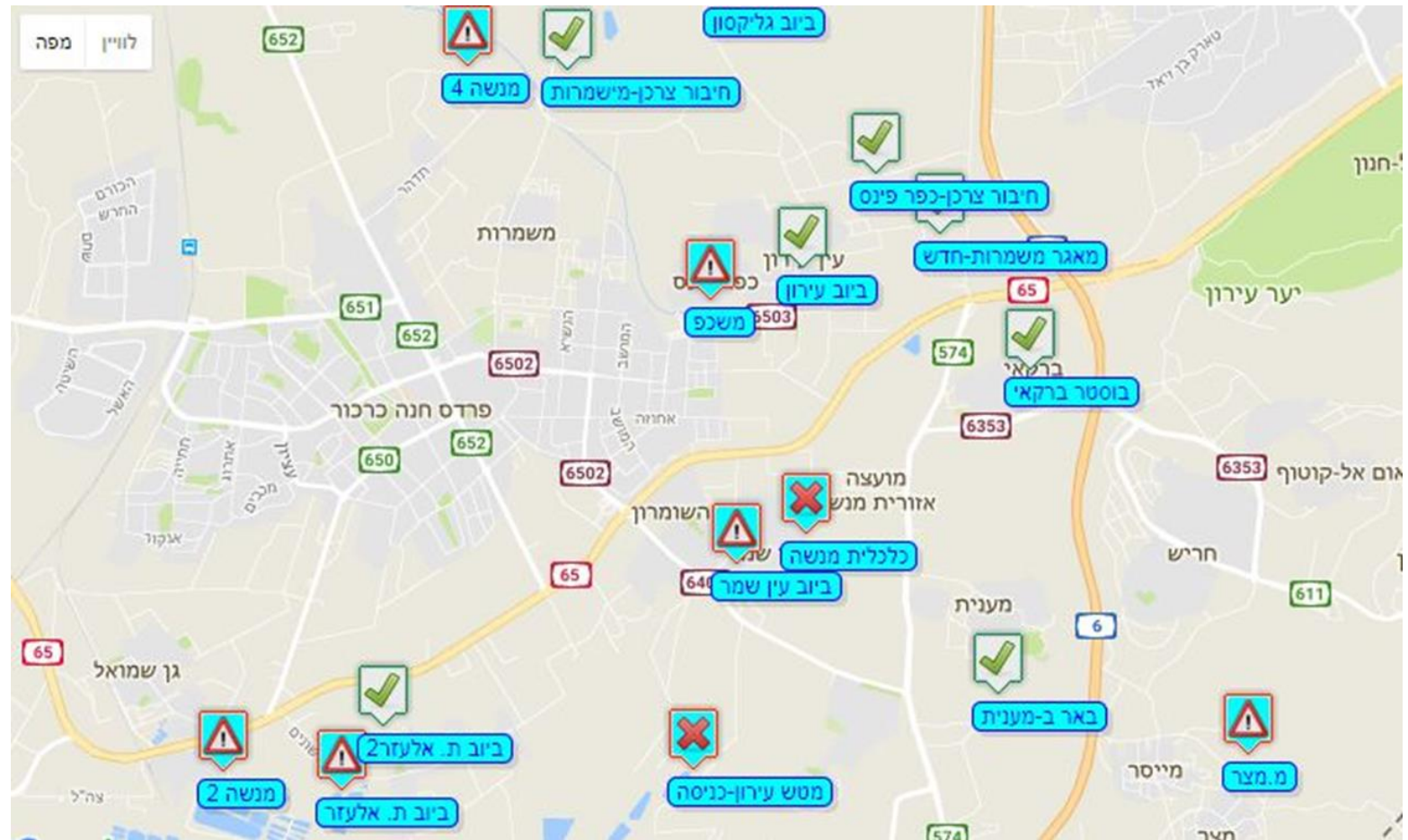
OK   Alert   No communication

Hybrid system

- RealiteQ can transfer the information to any existing HMI software installed in the utility

- RealiteQ can work in parallel to the existing SCADA (connecting new sites to the existing HMI of old users), and as a stand-alone system in the same time (for new users)

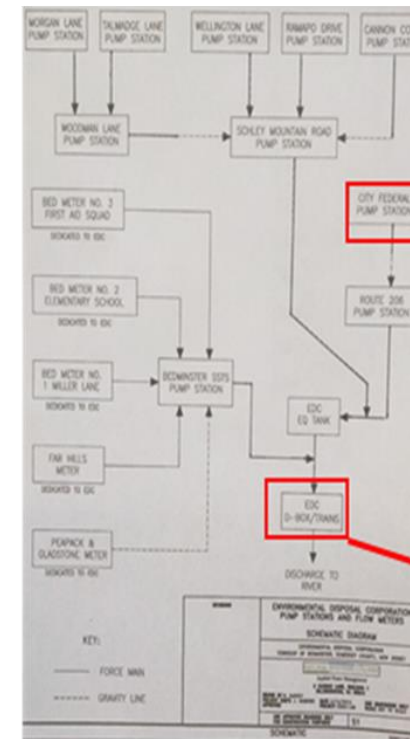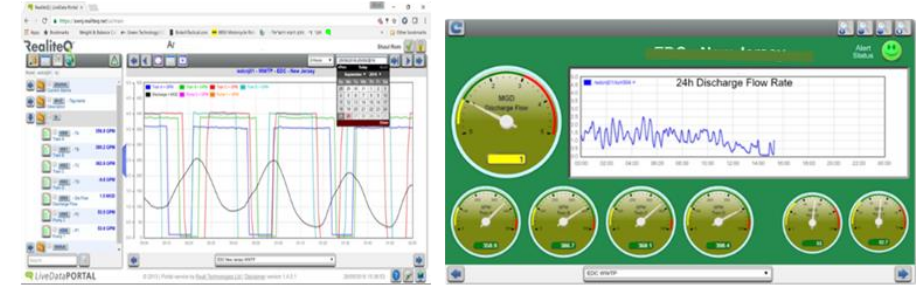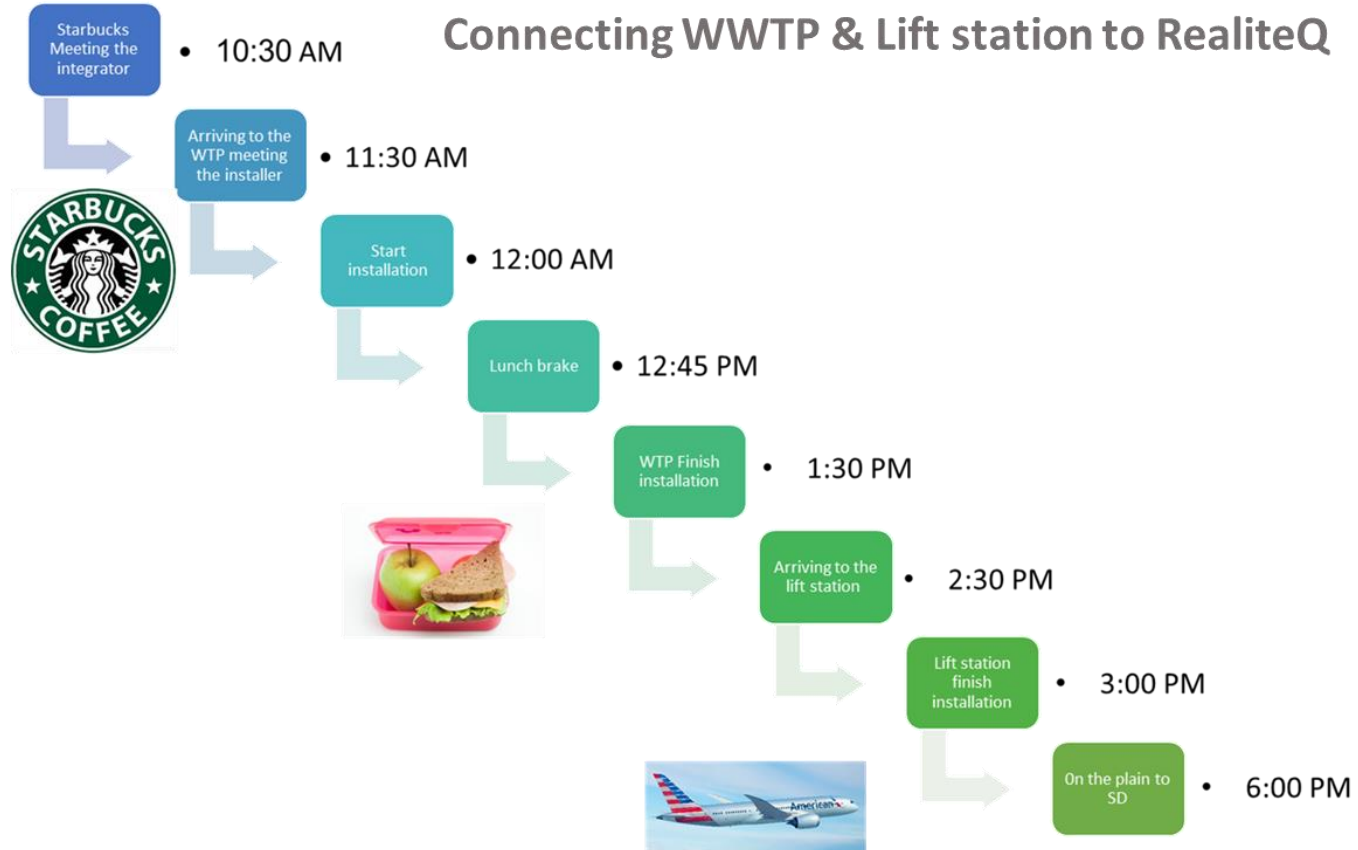Old HMI Having the data from RealiteQ COMP

New RealiteQ UI
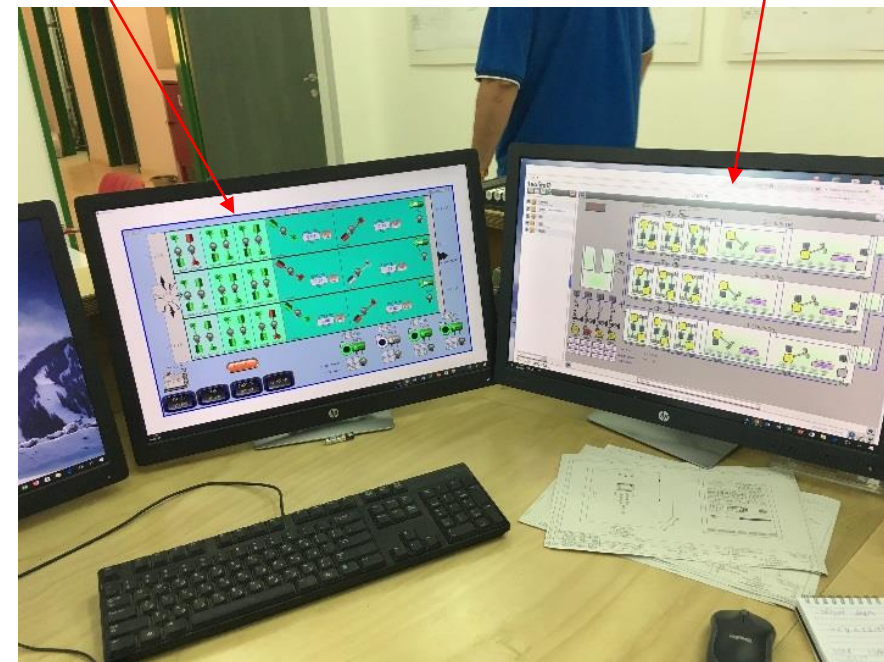
Control Room

upgrade your system in cost effective and nondestructive way

RealiteQ™
Real Time Remote Control and Monitoring

Fast, simple, seamless & none distractive installation

Connecting WWTP & Lift station to RealiteQ

- Starbucks Meeting the integrator — 10:30 AM
- Arriving to the WTP meeting the installer — 11:30 AM
- Start installation — 12:00 AM
- Lunch brake — 12:45 PM
- WTP Finish installation — 1:30 PM
- Arriving to the lift station — 2:30 PM
- Lift station finish installation — 3:00 PM
- On the plain to SD — 6:00 PM

The customer received two sites connected to RealiteQ within hours with no interruption to the ongoing operation of the facilities.

Smart alert management

- Escalation mode (unlimited escalation steps)

- "Nagging" for alarms

- Combine Nagging + escalation.

- It is possible to get statistics of alarms as part of the BI
  (such as average alarm duration, amount of active
  alarms, amount of historical alarms over period)...

RealiteQ clients can receive alarms as: e-mail, SMS message, Telegram message or any combination of the above options.

- No static IP, no private VPN required.

- Username and Password with score.

- Full user managements.

- Detailed credentials.

- Salted & encrypted passwords.

- All communication is done over SSL.

- Users sessions expire automatically.

- Password renew reminder.

- False log-in activates delay & block.

- A Real time "Value Change" Notification

- iCEX act as a client that access the **RealiteQ** servers cluster. iCEX firmware includes its own firewall.

- 2FA - Two Factor Authentication

- And more….

Client Network — Amazon Cloud server (AWS) — Client Authorized users

SUMMARY OF BENEFITS

1. Scalability and flexibility
2. Fast Disaster recovery
3. Security & Safety
4. Modular & Agnostic
5. Increased collaboration

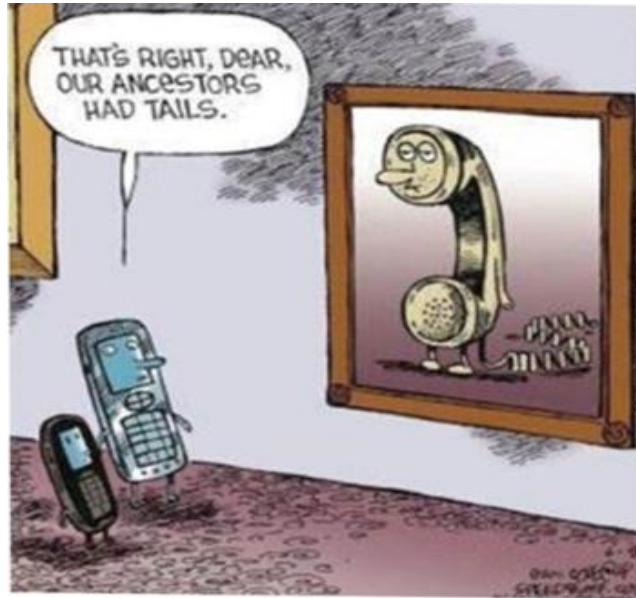6. Work from anywhere
7. Data Management
8. Shorten response time
9. Easy implementation
10. Affordable & available
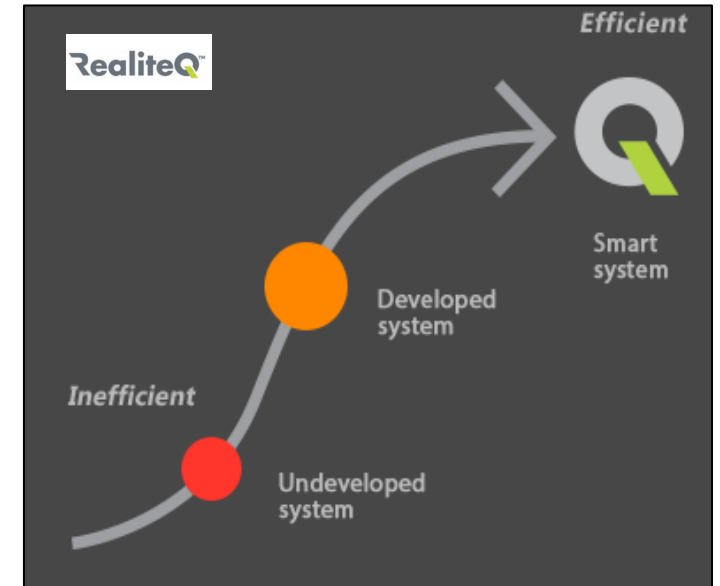
RealiteQ™
Real Time Remote Control and Monitoring

MUCH MORE THAN JUST A SCADA

The future is already hear

Reali Technologies LTD.
realinfo@RealiteQ.com
www.RealiteQ.com

RealiteQ- It Is all about efficiency

RealiteQ
Real Time Remote Control and Monitoring

SMART – SIMPLE - AFFORDABLE

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