

Under the patronage of **HRH Prince Khalid Al-Faisal**  
Advisor to the Custodian of the Two Holy Mosques & Governor of Makkah Region



المؤتمر الدولي الثاني والعشرون لإدارة الأصول والمرافق والصيانة  
The 22<sup>nd</sup> International Asset, Facility & Maintenance  
Management Conference

**Digitization - Excellence - Sustainability**

# Fostering Innovation Through Leveraging Disruptive Technologies

## Yazeed Al-Owaid

26-28 January 2025

The Ritz-Carlton Jeddah, Kingdom of Saudi Arabia

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## Agenda



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# Fostering Innovation Through Leveraging Disruptive Technologies



Objective

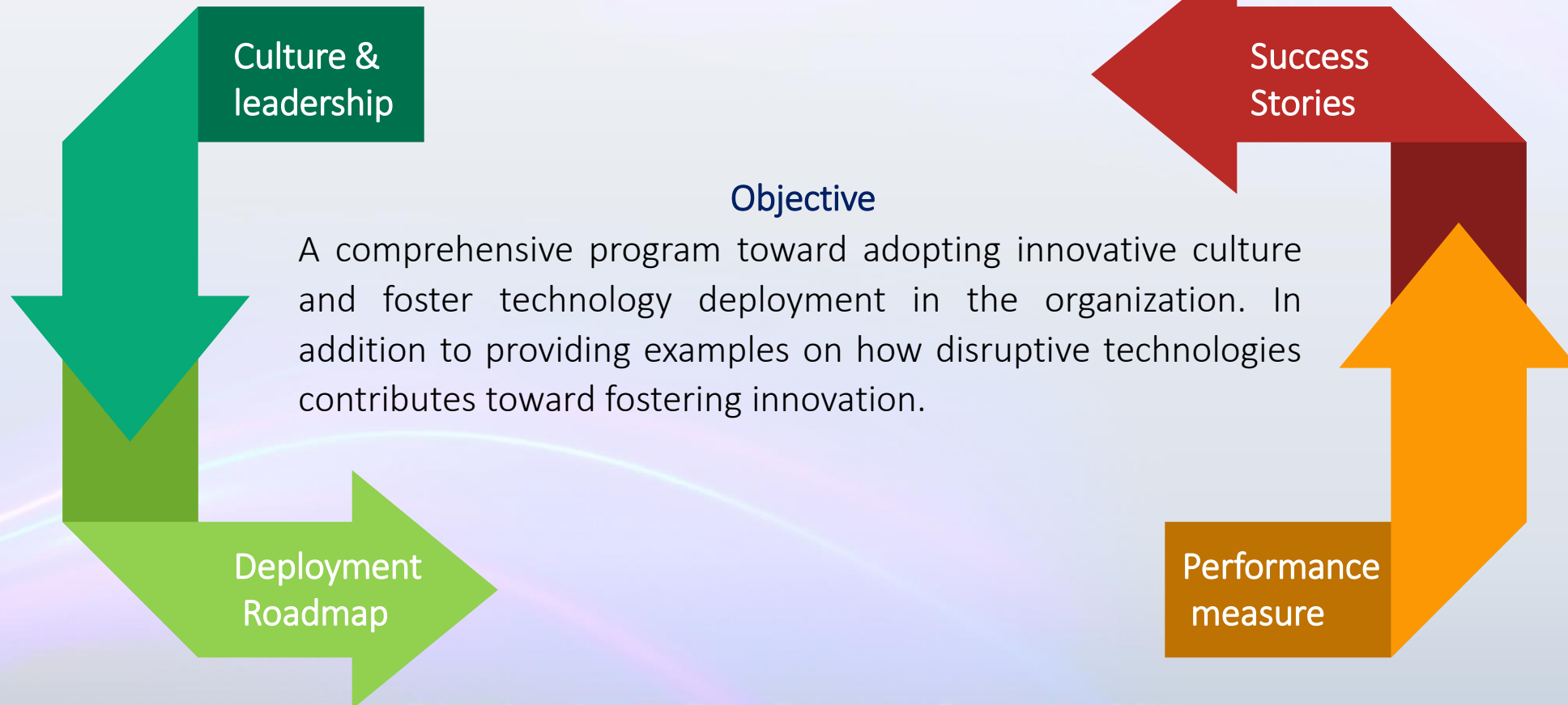
Culture & Leadership

Deployment Roadmap

Metrics & Rewards

Success Stories

Conclusion



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# Fostering Innovation Through Leveraging Disruptive Technologies

Objective



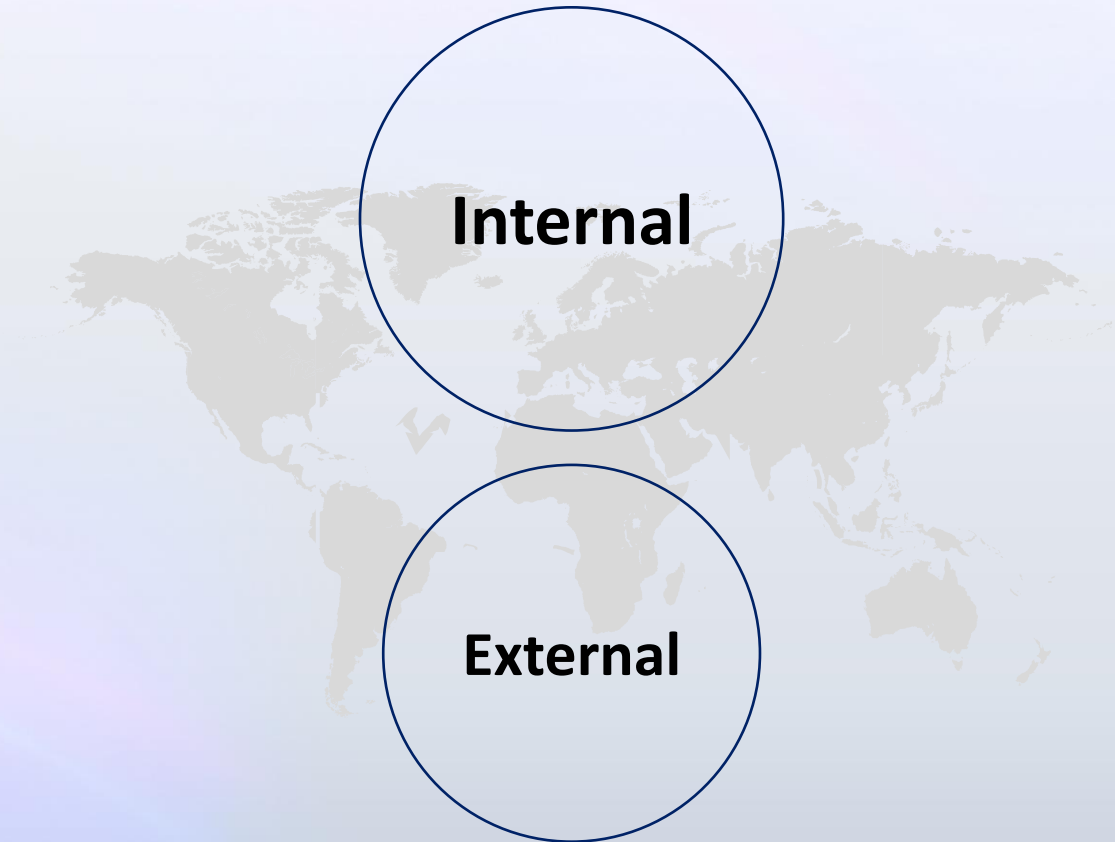
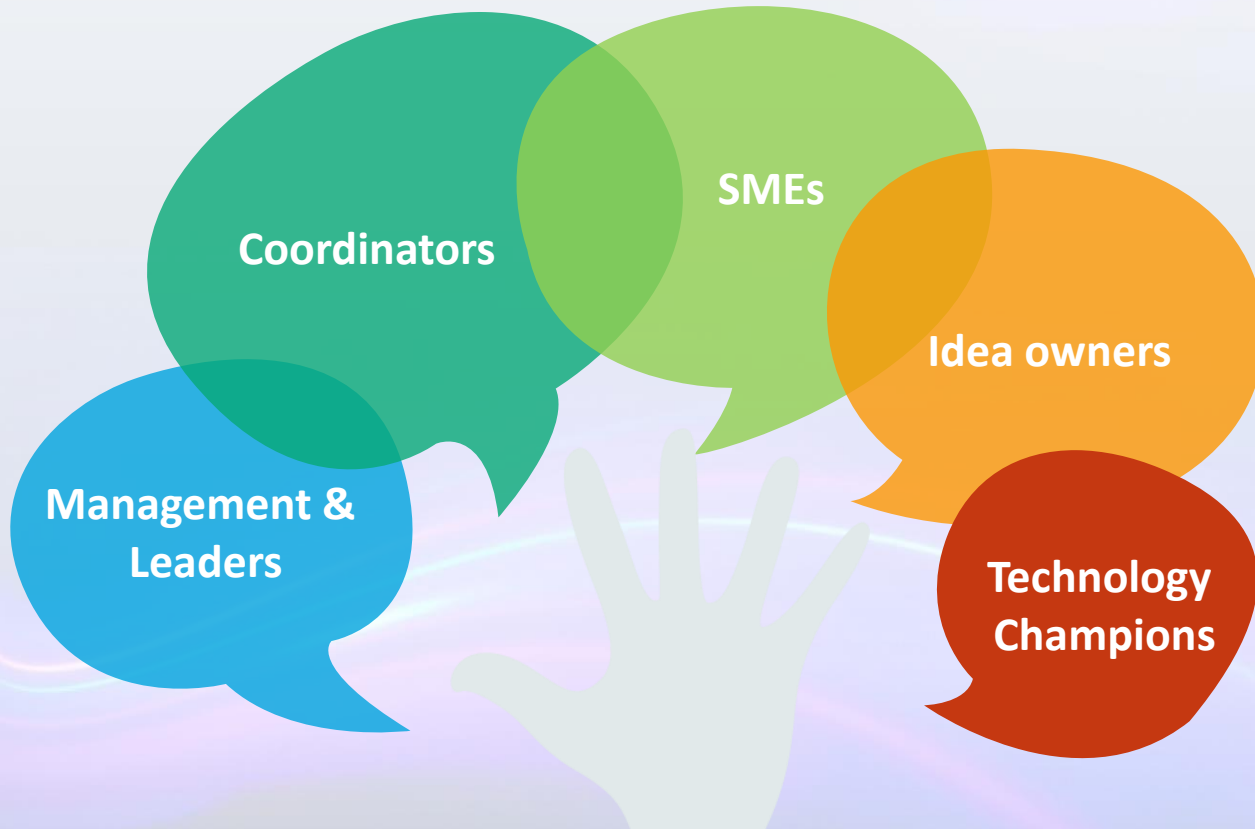
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# Fostering Innovation Through Leveraging Disruptive Technologies

Objective    Culture & Leadership    **Deployment Roadmap**    Metrics & Rewards    Success Stories    Conclusion

**Driver**    Challenges & Opportunities    Value Creation

**Strategic Initiative**    Maximize Assets utilization    Drive toward agile operations    Embrace unmanned operation

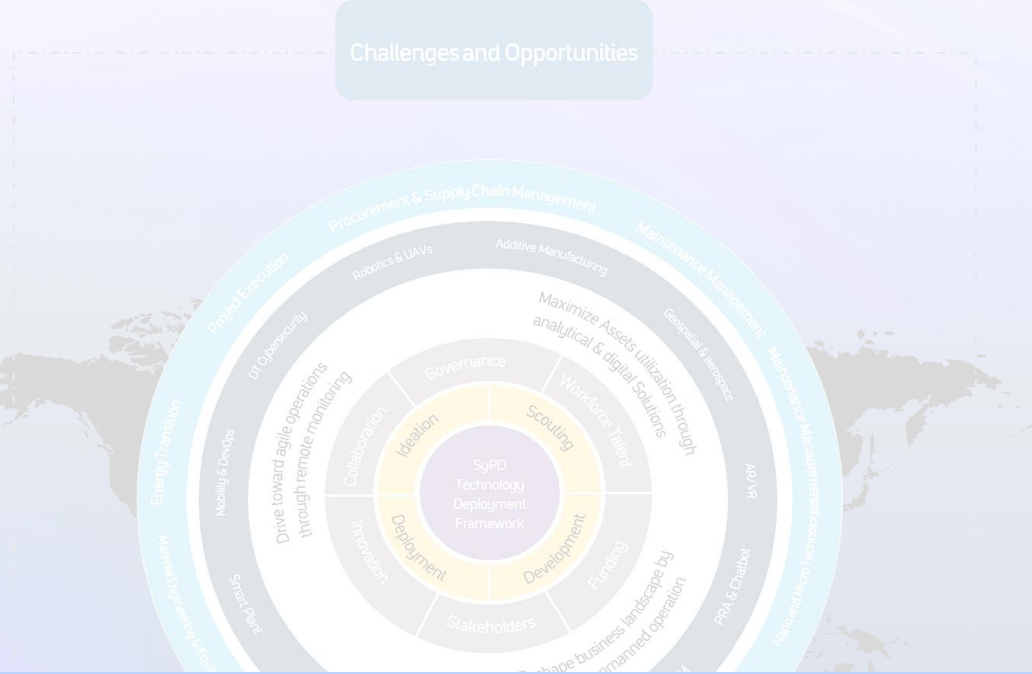
**Deployment Process**    Scouting    Identification    Evaluation    Deployment

**Enablers**    Collaboration    Governance    Workforce Talent    Funding    Stakeholders    Innovation

**Digital Tracks**    Robotics & UAV    DT Cyber-security    Mobility & DevOps    Smart Plant    Operational Analytics    Enterprise Analytics    Digital Twin    IBPM    RPA & Chatbo    AR / VR    Geospatial & Aerospace    Additive Manufacturing

**Technology Domain**    Stationary Equipment    Environmental    Material & Corrosion    Electrical    Upstream Process    Non-Metallic    UAV & Robotics    Inspection    Energy Efficiency    Process Automation    Rotating Equipment    Advance Process Solution Analytics

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# Fostering Innovation Through Leveraging Disruptive Technologies

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Driver	Challenges & Opportunities	Value Creation
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Value Creation

<u>Monetary</u>	<u>Efficiency &amp; Reliability</u>	<u>HSSE &amp; Sustainability</u>

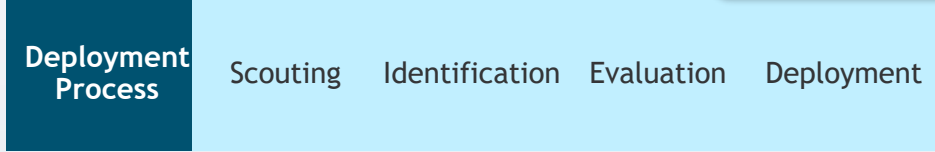
Major Challenges

Process Engineering & Control	<ul style="list-style-type: none"> <li>Assess the effective utilization of chemicals.</li> <li>Leverage the applicable technologies to automate the chemical injection at cost and qualitative approach.</li> </ul>
Environmental, Health & Sustainability	<ul style="list-style-type: none"> <li>Flaring and emission minimization</li> <li>Waste Management</li> </ul>
Material Engineering & Equipment	<ul style="list-style-type: none"> <li>Managing pipeline integrity: inspection, leak detection, pipeline condition assessment ,repair, and non-scrappable buried pipelines.</li> </ul>
Inspection & UAV	<ul style="list-style-type: none"> <li>Proactive approach through collaboration with corporate entities , vendors , and suppliers to leverage cutting-edge technologies to ensure asset integrity.</li> </ul>
Energy Transition	<ul style="list-style-type: none"> <li>Optimizing energy consumption through technology application , renewable and clean energy.</li> </ul>
Maintenance Management	<ul style="list-style-type: none"> <li>Rotating equipment life cycle, rotating equipment MTBF. stationary equipment , aging , etc.</li> </ul>

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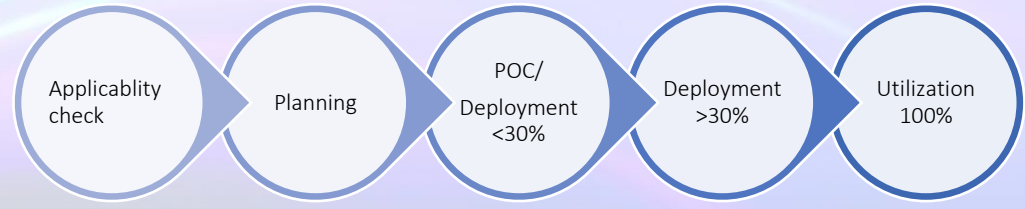
Objective	Culture & Leadership	Deployment Roadmap	Metrics & Rewards	Success Stories	Conclusion
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## Innovation Idea Deployment Life Cycle



## Technology Deployment Life Cycle



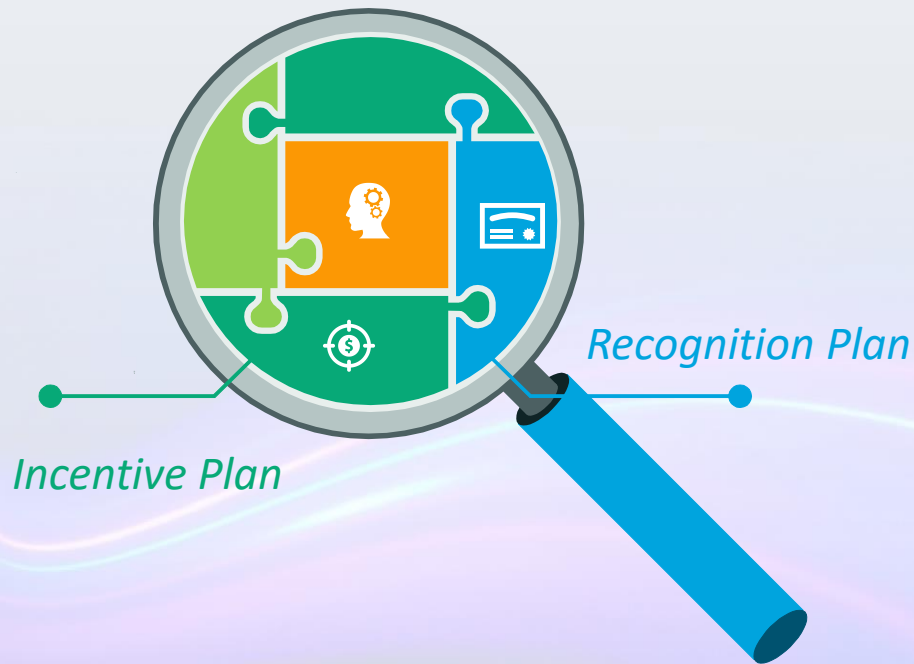
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## Measuring Metrics & KPIs

Performance Measures	Description
Employees Innovation Participation Rate (%)	$\frac{(\# \text{ Employees submitting Ideas})}{(\# \text{ Employees})} \times 100$
Innovation Excellence Index	<p>The IEI is a composite index which measures the major components of organization's Innovation Ecosystem</p> <ul style="list-style-type: none"> <li>0.1 * (Participation Rate (PR)/PR target)</li> <li>+ 0.2 * (Review Rate (RR)/RR Target)</li> <li>+ 0.1 * (Average Review Time (ART) &lt; ART target)</li> <li>+ 0.1 * (Approval Rate (AR)/AR Target)</li> <li>+ 0.2 * (Implementation Rate (IR)/IR Target)</li> <li>+ 0.3 * (Innovation Realized Value (IRV)/IRV target)</li> </ul>
# of Filed Patents	# of Filed patents each quarter
# of Granted Patents	# of Granted patents each quarter
Technology Deployments Index (TDI)	<p>The TDI is a composite index which measures the following components</p> <ul style="list-style-type: none"> <li>Planning: Number of Planned Technologies (%40)</li> <li>Execution: Percentage of Deployed Technologies ( %30)</li> <li>Post Deployment: Value Realized from Technology Deployment ( %30)</li> </ul>



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Data Analytics &  
Digital Twin



AR / VR /MR



RPA &  
Chatbot



3D Printing

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1. Leadership and vision

2. Business alignment

3. Fostering innovation culture

4. Talent development

5. Building partnerships and collaborations

6. Strategic planning

7. Staying ahead of the curve

8. Impact and value realization

9. Developing metrics for success

10. Utilizing disruptive technology

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**THANK YOU!**

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