IN4.0 GM AI Foundry Industrial Accelerator Impact Report

Cohort 1

01.06.2021 to 30.07.2021

Date: 09/08/2021

The GM AI Foundry
Industrial Accelerator

Part of the

Greater Manchester | Greater Intelligence | Greater Business

AI Foundry

Contents

Foreword

The GM AI Foundry Industrial Accelerator has provided a unique opportunity for manufacturing and engineering SMEs in the Greater Manchester region to acquire a solid knowledge base and upskill mid to senior-level managers in the fields of Machine Learning, Artificial Intelligence (AI), Internet of Things (IoT) by developing a Use Case that suit their business' needs, with the help of numerous experts from IN4.0 Group and their partners.

The GM AI Foundry Industrial Accelerator consisted of 5 days of session delivering from the IN4.0 Group Tech Team and selected partners, in addition to 1 day reserved for a celebration and networking event at HOST Salford.
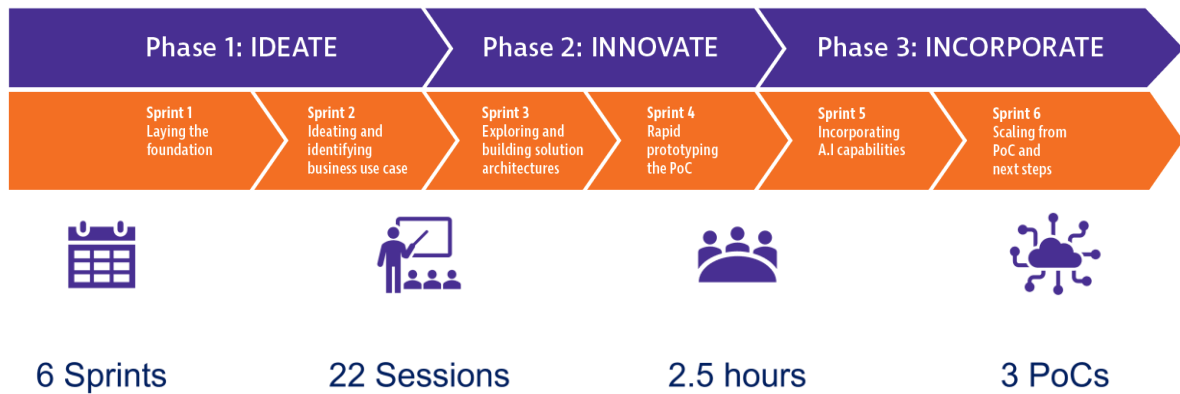
The GM AI Foundry Industrial Accelerator offered an unparalleled set of sessions delivered by experts in the fields of AI, Machine Learning & IoT, hosting speakers not only from the IN4.0 Group Cyber & Tech Team but also by prestigious organisations and businesses such as AWS, Lancashire University & Crystal Doors.

Furthermore, the SMEs had the chance to develop individual Use Cases to suit their business needs, based on 3 distinct Proofs of Concept (PoCs): Machine Condition and Monitoring, Supply chain digitalisation, and process automation using IoT.

The SMEs were provided with technological equipment and step-by-step digital guides on the PoCs, thus being able to get a better grasp of the concepts presented and understand the importance of the aforementioned technologies. Lastly, all the SMEs received continuous support from the IN4.0 via 1-2-1 calls, visits at HOST and emails.

Ultimately, two of the cornerstones of the GM AI Foundry Accelerator Programme was the engagement and communication between the participating SMEs and with HOST/IN4.0 Group, through which long-term, sustainable relationships could be established. There have been delegates that eventually came on board with HOST or even built collaboration routes between them and with all participating organisations (such as Lancaster University).

About The Programme

Phase 1: IDEATE | Phase 2: INNOVATE | Phase 3: INCORPORATE

Sprint 1 Laying the foundation | **Sprint 2** Ideating and identifying business use case | **Sprint 3** Exploring and building solution architectures | **Sprint 4** Rapid prototyping the PoC | **Sprint 5** Incorporating A.I capabilities | **Sprint 6** Scaling from PoC and next steps

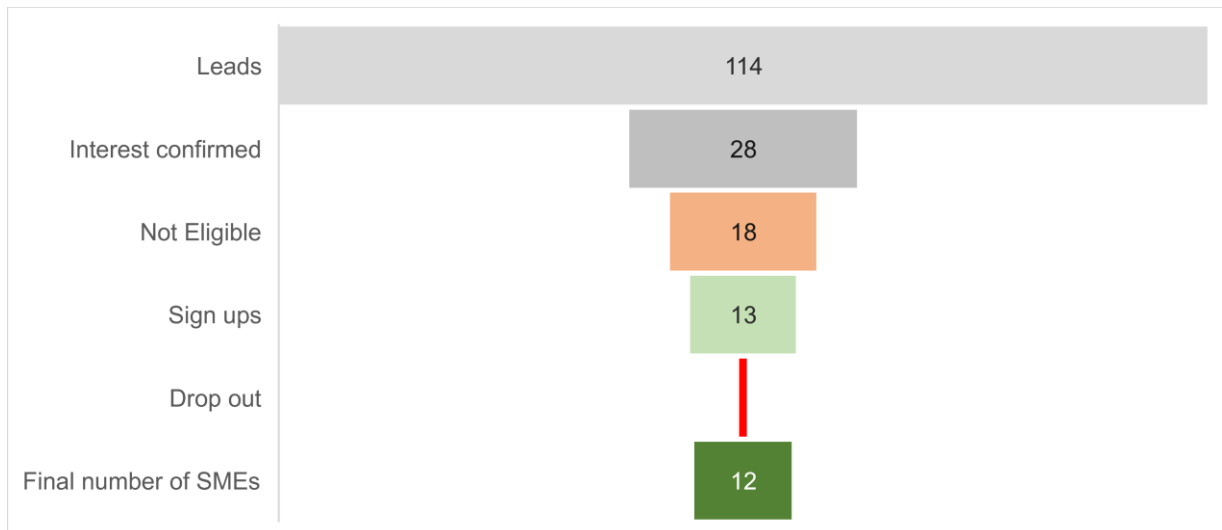6 Sprints 22 Sessions 2.5 hours 3 PoCs

Total Contact Hours: 29 hours.

1-2-1 Support Hours: 2 to 3 hours per SME.

Onboarding support: 1 to 2 hours.

The GM AI Programme was delivered to **12 SMEs** (11 claimed through Lancaster University and 1 SME paid for the programme).

Recruitment pipeline

Leads	114
Interest confirmed	28
Not Eligible	18
Sign ups	13
Drop out	
Final number of SMEs	12

Recruitment sources:

- Rochdale Development Agency
- IN4.0 Contacts
- Greater Manchester Chamber of Commerce

Timeline of delivery & Curriculum

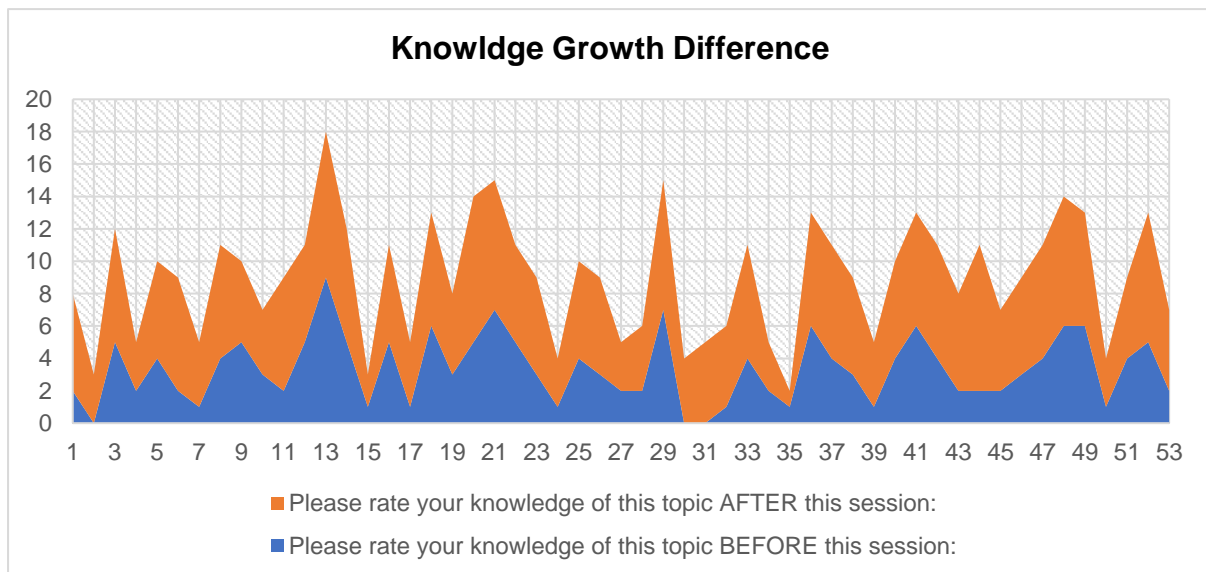| Delivery Date	Topic	Person in-charge
01/06/2021	Programme induction and overview	IN4.0 Leadership Team
	Looking at the future of Industry 4.0 technology	IN4.0 Tech Team
	Sustainable thinking for manufacturing	Richard Hagan
	Manchester Metropolitan University - Digital Survey	Natasha Moorhouse / MMU
	Amazon's Approach to Innovation	AWS Innovation Team
	Feedback, next steps, wrap up	IN4.0 Ops Team + Mary
08/06/2021	Intro to Internet of Things (IoT) and Machine Learning (ML)	Sufian / AWS
	Process automation and implication on manufacturing	Kaushal / AWS
	Introduction to Additive Manufacturing	Samuel Walsh (Lancaster University)
	Introduction to Cyber Security - Importance of awareness	David Taylor
	Feedback, next steps, wrap up	IN4.0 Ops Team + Mary
15/06/2021	Exploring Digital Architectures (Fundamental building blocks)	Sufian
	Demonstration of onboarding IoT devices in AWS	Kaushal
	Development of Machine Condition Monitoring PoC	Sufian
	Demonstration of PoC architectures	Sufian
	Feedback, next steps, wrap up	IN4.0 Ops Team + Mary
22/06/2021	Importance of Data Analytics and AI	Arun, Ashrit
	Machine Condition Monitoring & Anomaly Detection (PoC)	Sufian
	Technical Q&A	Georgios
	Founder Story - A Case Study (Industry Evolution)	SME
	Supply chain digitisation	Sufian/Ashrit
	Process automation (PoC)	Kaushal
06/07/2021	Machine Learning: The next steps with data	Sufian
	Panel discussion: Relevance of Machine Learning in Manufacturing	IN4.0 - Industry/AWS/Min, Samuel Walsh (Lancaster University)
	Journey of building edge intelligence	Sufian
	Technology Roadmapping (PoC to Scale)	Dimitrios, AWS
	Feedback, next steps, wrap up	IN4.0 Ops Team + Mary
30/07/2021	Celebration: Wrapping up the experience, presenting ideas, summary, discussions	IN4.0

Our Cohort

S.No	Delegate Name	Organisation Name	Sector	Region
1	Tony Kehoe	NEG (Paid)	Manufacturing	Wigan
2	Clare Cassidy	Buggy Tunes	Engineering	Wigan
3	Tom Mathew and Tom Curtin	Dunsters Farm	Logistics	Bury
4	Mohammed Qasim	MSM	Manufacturing	Middleton
5	Andy Barrow	Trust Renewables	Engineering	Rochdale
6	Steven Bookbinder	Viscgo	Healthcare	Manchester
7	Gary Conner	Wardwiz	Software and IT	Salford
8	Matthew Donnelly	1860 Gel Ltd	Engineering	Rochdale
9	Zaim Naqvi	Torque VR	Software and IT	Salford
10	Ben Horn	Crystal Doors	Construction	Rochdale
11	Simon Bodil	Simkiss	Manufacturing	Middleton
12	Paul Dixon	Molesworths	Legal	Rochdale

Feedback

Below are the cumulative scores calculated based on the feedback provided by the delegates of the 1st Cohort

This was a well organised session **87%**	The facilities were appropriate for the session **80%**
The speaker/s were knowledgeable **93%**	This session was clearly presented **84%**
The session was delivered at a suitable pace **79%**	The session was well structured **83%**
The supporting technologies, materials and resources used were effective **81%**	The session was relevant to my business **80%**
I was kept interested and engaged **83%**	Had sufficient opportunities to seek and receive clarifications **88%**

Knowldge Growth Difference

- ■ Please rate your knowledge of this topic AFTER this session:
- ■ Please rate your knowledge of this topic BEFORE this session:

Feedback Comments

"Learned how other companies approach ideas for the future of their businesses".

"An eye opener in term of this area. Hope to utilise within our own business and with clients".

"The Working backwards mentality from AWS has made me think about how the business could progress. Also, it was good to hear the questions from the other delegates on the course".

"The session had a lot of different speakers and provided a lot of different ways of thinking about innovation and helping provide a structure or blueprint to build a roadmap for our business".

"I have been encouraged by the mindset of the GMAI team and the alignment with the vision for Dunsters Farm. Ideas have already started to flow, and we have some that can even be implemented straight away".

"I have learned a good amount of information on how other companies operate and how AI can be used to improve how the business operates and how it can be used to help achieve a business's goals".

"Increased understanding of how topics covered in the session can have a positive impact on our clients' businesses".

"Interesting intro to IoT and ML but got quite detailed quite quick and I definitely need to revisit. Process Automation session really useful and aligned with our thinking. AM interesting but I dont think relevant to our business, at least not now. Cyber Security good overview".

"I have learned about new technology, IoT, AWS services, different manufacturing techniques and ways to secure my business from a Cyber attack".

"I understand the possibilities and roughly what programming the IOT devices looks like. Written instructions are being sent so we can practice before next week's sessions. Thank you, I appreciate it's very difficult using Teams".

"This session has helped me understand what needs to be in place to establish communications between devices and how complex the data transformation is".

"Yes, it was very interesting and I kept up with a lot of it but think I was in the minority. It still lacked context. Clearly seems to be from a more detailed course and the challenge is clearly making this work in a shorter format and remotely".

"It has given me new ideas particularly for analysing data on remote sites".

"Broader understanding. Technical aspects not really gone in as yet to do the work with the help of the manuals. As a business owner, I am more interested in the high-level applications and potential to transform business rather than technical detail at this stage".

The Team

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IN4.0 Group & HOST Salford

Ashrit Cheepirishetti
Digital Programme Lead at IN4.0 Group.

Arun Kumar Manoharan
Digital Transformation Manager at IN4.0 Group.

Sufian Kaki Aslam
IoT Solutions Architect at IN4.0 Group.

Dr. Kaushal Jani
Senior Project Engineer at IN4.0 Group.

Georgios Evangelinos
Junior Data Engineer at IN4.0 Group.

David Taylor
Head of HOST Cyber.

IN4.0™
Group

External Partners

Richard Hagan
Crystal Doors, Founder & Managing Director

Rob Hodges
AWS, Head of Digital Innovation Programme in the UK.

Mary Mason
Lancaster University, Project Administrator – AI Foundry

Samuel Walsh
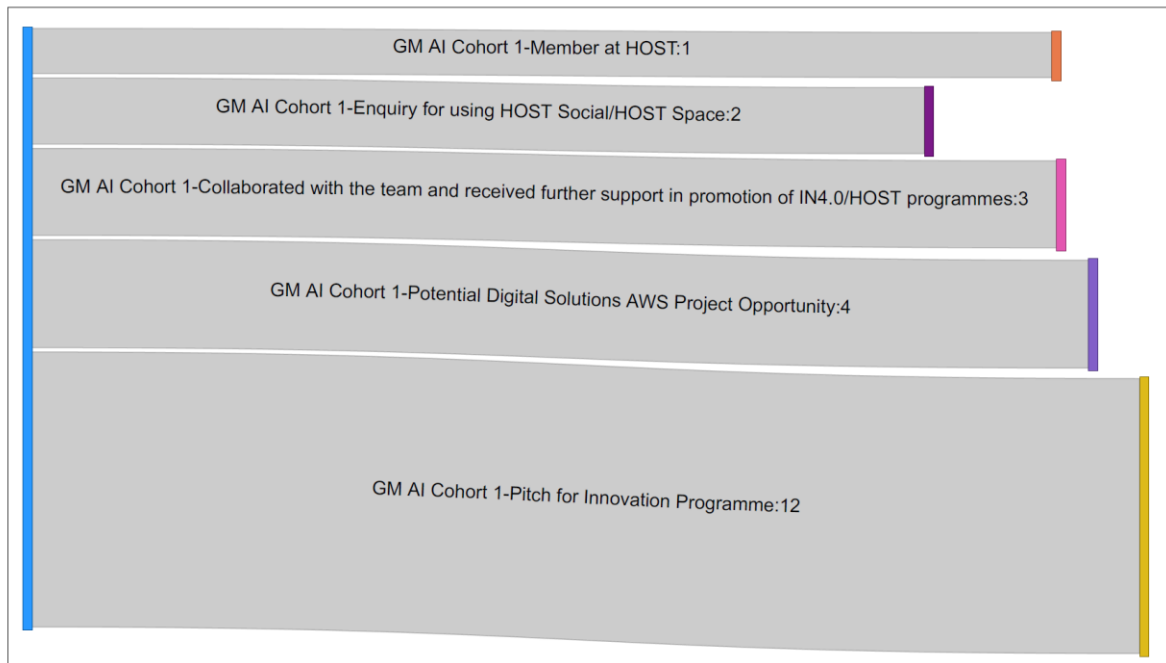Lancaster University, Project Engineer

Dimitrios Spiliopoulos
EMEA, Senior IoT Go-To-Market Manager

Customer Journey (Current Map)

Following the success of the programme, they key outcome we have achieved is to provide support to the delegates in continuing their digital transformation journey. In addition to positioning all SMEs for the Innovation Programme, scheduled to launch in November 2021, key outcomes we have achieved are as follows

- One SME has taken Premium Club Membership at HOST.
- 2 enquiries so far to make use of HOST Space and HOST Social.
- We are in conversation with 4 SMEs in further project development.
- 3 SMEs have collaborated with us to promote our programmes to their respective networks and have volunteered to support us in marketing campaigns for Cohort 2.
- Introduction given to potential participants for Cohort 2.

GM AI Cohort 1-Member at HOST:1

GM AI Cohort 1-Enquiry for using HOST Social/HOST Space:2

GM AI Cohort 1-Collaborated with the team and received further support in promotion of IN4.0/HOST programmes:3

GM AI Cohort 1-Potential Digital Solutions AWS Project Opportunity:4

GM AI Cohort 1-Pitch for Innovation Programme:12

Conclusion – Cohort 2

- Delivery dates for Cohort 2 are as follows:
    - Day 1 – 21st September (online session)
    - Day 2 – 5th October (online session)
    - Day 3 – 19th October (online session)
    - Day 4 – 2nd November (in person session)
    - Day 5 – 16th November (online session)
    - Day 6 – 30th November (in person session)
- The delivery model has been revised. This means that we will be looking to implement a hybrid approach with both on-site delivery and online sessions. In addition to this, we will further enhance our handholding support to the participating SMEs. Revised timetable can be accessed via this link.
- Instead of working on 3 different PoCs, we will train and deliver a single PoC (Predictive Maintenance). Further PoC development for individual business needs of each SME could be achieved through the 1-2-1 support calls and the pre-defined digital guides.
- For the recruitment of the next cohort, our main sources for leads will be Wigan Council and Salford Council. Recruitment drive to be completed by: 7th September 2021