



#ISCFChallenges

#IndustrialStrategy

The development of the

Industrial Strategy Challenge Fund

Ruth McKernan (Innovate UK)

Philip Nelson (Research Councils UK)

[Mike Biddle opening presentation to London Workshop]

[18/01/17 – v3a]

To start – some words of thanks...

- Thank you for attending at such short notice!
- Thank you to your colleagues and partners for their interest even if they couldn't all be here today – we were 3x over-subscribed!
- Thank you for agreeing to help develop the **best current thinking** for the Industrial Strategy Challenge Fund!



When a meeting, or part thereof, is held under the

Chatham House Rule,

participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.

Source:

<https://www.flickr.com/photos/markhillary/382598174/in/photolist-5QTKEM-zNV7f-6oSfP1/>

<http://www.chathamhouse.org/about/chatham-house-rule>

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- What it is
- Story so far
- Best current thinking
- Expectations for today

One part of the Industrial Strategy

Industrial Strategy

[Government will be publishing the Industrial Strategy Green Paper consultation soon]

#IndustrialStrategy

Industrial Strategy Challenge Fund

Programmes delivered by the fund will be industry-led and powered by multi-disciplinary research and business academic collaboration.

It will help identify and develop UK industries that are fit for the future, driving progress in technologies where the UK can become a world-leader in research and commercialisation.

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Statement from Jo Johnson

“Thank you for your commitment and contribution to helping us shape the Industrial Strategy Challenge Fund. These workshops will bring together experts from across the country to help us identify where the UK can better take advantage of its world-leading expertise in research and innovation.”



Working with Innovate UK and the Research Councils, this is a fantastic opportunity for you to help us shape the challenges that the fund could address and share your views and expertise. This fund represents a clear commitment from government to put research and innovation at the heart of our industrial strategy and ensure the UK remains at the forefront of innovation for years to come.”

Jo Johnson

Minister of State for Universities, Science, Research and Innovation

Industrial Strategy Challenge Fund (ISCF)

- Initially delivered by Innovate UK and the Research Councils, this will be managed by UK Research and Innovation once it is established.
- Programmes delivered by the fund will be industry-led and powered by multi-disciplinary research and business-academic collaboration.
- The Industrial Strategy Challenge Fund will:
 - Help the UK capitalise on its strengths;
 - Support business led collaborations with coordinated research efforts;
 - Identify challenges that may well cut across boundaries of research;
 - Focus on areas with the potential to transform existing industries and create entirely new ones.
- The fund is part of Government's long-term plan for research and innovation putting them at the heart of industrial strategy.



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Story so far

Prime Minister at CBI Annual Conference 2016



“Our strengths are clear.

We are an open, competitive, trading economy.

We compete with the best in autos, aerospace and advanced engineering.

We are breaking new ground in life sciences and new fields like robotics, artificial intelligence, and quantum computing.

We are leaders in global professional services from architecture to accountancy from law to consulting.”

[gov.uk news story on the day also mentioned: industrial biotechnology, medical technology, satellites and advanced materials manufacturing]

Prime Minister at CBI Annual Conference 2016



[Industrial Strategy is about] *“creating the conditions where winners can emerge and grow. It is about backing those winners all the way to encourage them to invest in the long-term future of Britain. And about delivering jobs and economic growth to every community and corner of the country.”*

*“A new Industrial Strategy Challenge Fund will direct some of that investment to scientific **research and the development of a number of priority technologies** in particular, helping to address Britain’s historic weakness on commercialisation and turning our world-leading research into long-term success.”*

Chancellor's Autumn Statement 2016

"Mr Speaker, we do not invest enough in research, development and innovation.

As the pace of technology advances and competition from the rest of the world increases, we must build on our strengths in science and tech innovation to ensure the next generation of discoveries is made, developed and produced in Britain.

*So today I can confirm the additional investment in R&D, **rising to an extra £2 billion per year by 20-21**, announced by my Right Honourable Friend, the Prime Minister on Monday."*



Gov.uk: some of the things we've announced (#16)

- £2 billion more per year in research and development funding by 2020-21
- A major increase in research and development funding for universities and businesses with R&D projects to help the UK remain an attractive place for businesses to invest in innovative research.
- This will back scientific research and development of technologies such as **robotics**, **artificial intelligence** and **industrial biotechnology**.

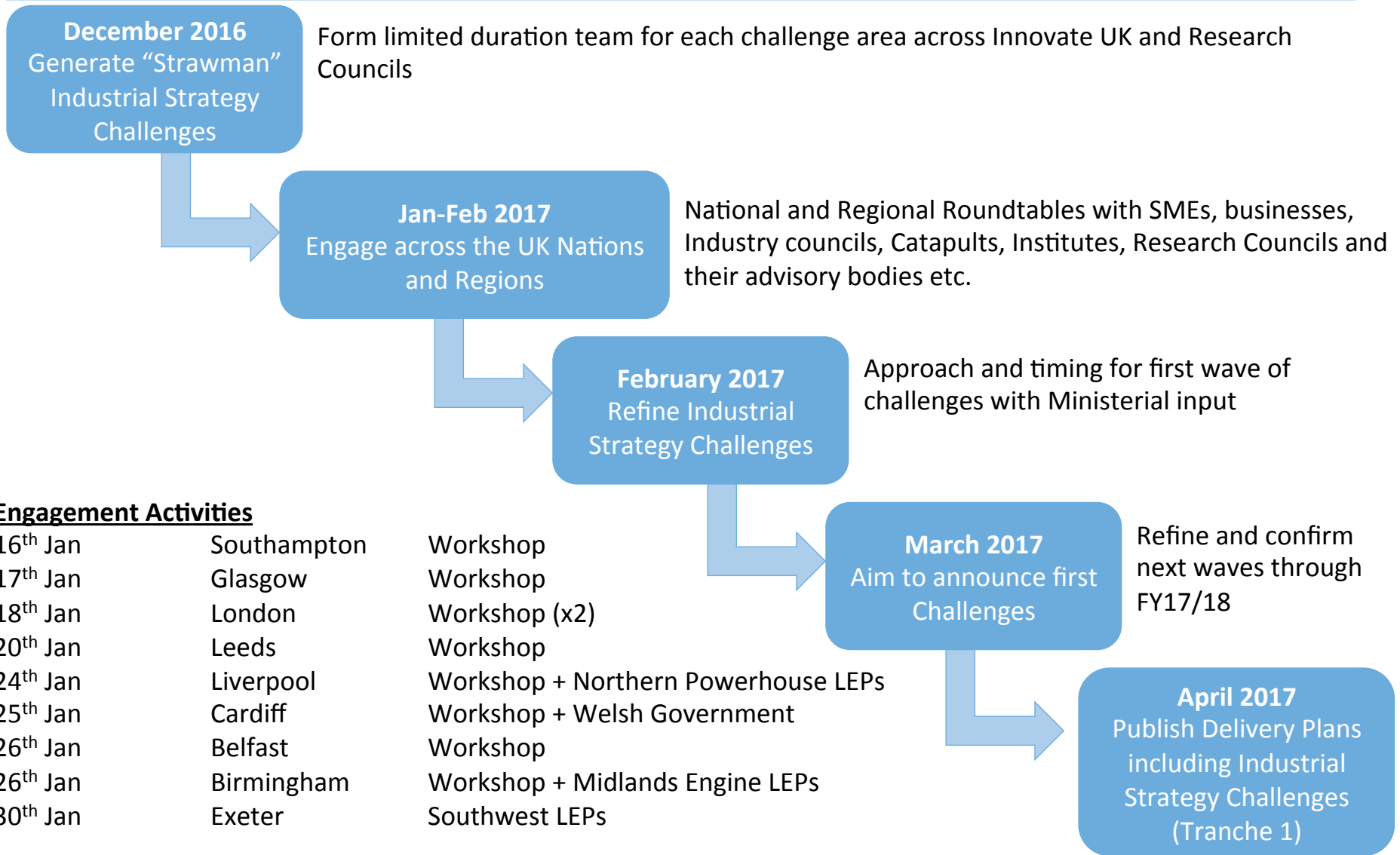


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Best current thinking

Immediate timeline



Defining a “Challenge”; an example from point-of-care diagnostics

The challenge is to develop a point-of-care diagnostic test that can rule out antibiotic use or help identify an effective antibiotic to treat a patient.

The winning test must be:

- **Needed:** Improve the antibiotic treatment decision of a globally occurring problem;
- **Accurate:** Eliminate harmful treatment decisions and give confidence to the user;
- **Affordable:** Affordable for purchase and use everywhere that it is needed;
- **Rapid:** Under 30 minutes from sample collection to result;
- **Easy-to-use:** Can be used and interpreted anywhere in the world without advanced medical resources;
- **Scalable:** An original idea with a plan for full-scale manufacture and distribution;
- **Safe:** The benefits of using the test far outweigh any risks associated with it;
- **Connected:** In-built data-recording and transmission capability;
- **Prototype:** Have at least three copies of your prototype ready for clinical trials.

[Source: <https://longitudeprize.org/prize-rules>]

Challenge Areas

Specific challenges to explore through engagement workshops:

- Bioscience and biotechnology;
- Leading edge healthcare and medicine;
- Manufacturing processes and materials of the future;
- New energy technologies including battery storage and grid technologies;
- Quantum technologies;
- Robotics and artificial intelligence (including driverless cars and drones);
- Satellites and space technologies; and
- Transformative digital technologies including supercomputing, advanced modelling, and 5G.

Additional themes to explore through engagement workshops:

- Integrated and Sustainable Cities
- Technologies for the Creative Industries

Challenge Areas

Bioscience & Biotechnology

Increase UK self-reliance in food, energy and materials production.

Leading Edge Healthcare & Medicine

Improve patient outcomes through cutting-edge, personalised therapies and new antimicrobials and establish the UK as a world leader in the development and commercialisation of cell and gene therapies.

Manufacturing & Materials of the Future

Ensure that the UK leads the world in the sustainable manufacturing and delivery of the next generation of products and components.

New Energy Technologies

Become the global lead in solving the energy challenge of supplying clean, affordable energy securely to ever more-demanding societies around the world.

Quantum Technologies

To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using next generation quantum technologies in areas such as sub-surface imaging, GPS-free navigation, advanced sensing and communications.

Robotics and Artificial Intelligence (RAI)

To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using RAI technologies in areas such as hazardous environments, autonomous transport, health & social care and advanced decision making with AI.

Space and Satellite Technologies

To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using satellite-based technologies in areas such as communications, navigation and earth observation.

Transformative Digital Technologies

To create UK economic wealth, and an economy that works for everyone, by overcoming challenges using digital technologies such as data, AI/ML, cyber security, immersive, HPC, modelling and 5G.

Integrated & Sustainable Cities

Establish the world's best smart city demonstrator, introducing 5G technologies and applications, attracting global mobile companies to the UK.

Technologies for the Creative Industries

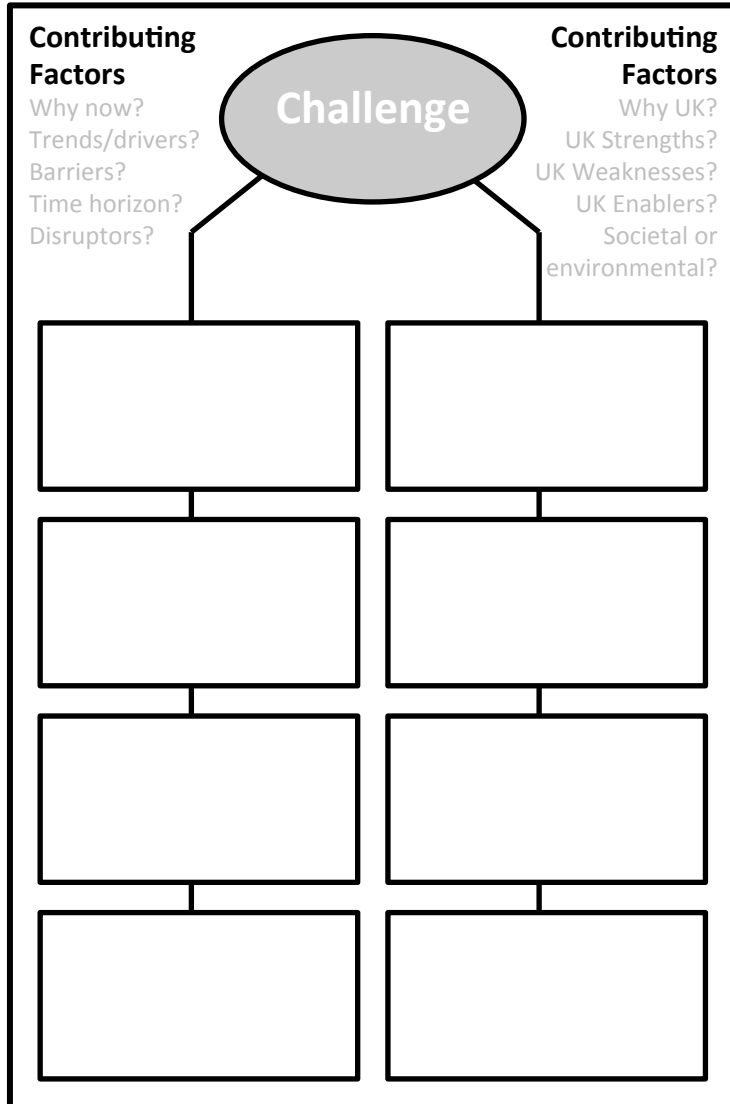
To create UK economic wealth, and an economy that works for everyone, by overcoming challenges to anchor and grow the UK creative sector and its contribution to wealth generation and society.

Expectations for today – Please...

- Listen and contribute!
- Help us look for patterns across the challenges and across the UK
- Help us define the industrial challenges in a way that will resonate with the public!
- Help us build a compelling business case for Government!
- Help validate and improve challenges or make the case for new!
- In addition - we will be meeting local leaders after many of the workshops to understand how this all fits with the Science & Innovation Audits and regional strengths.

Challenge Description (Please reword the challenge if necessary)

Vote Stickers Here



Global Market	Main Competitors
Evidence	Evidence

Growth/Jobs/Productivity

Evidence

Why is ISCF support needed?

Evidence

Please help us establish...

- Evidence of a potential **global market** that could be created or disrupted by new innovation which is potentially large, or fast growing and sustainable;
- Evidence that the UK has capabilities to meet market needs in terms of **research strength and business capacity**;
- Evidence that now is the **right time** to accelerate advances in this field to generate significant **social and economic benefits**;
- Evidence of a **business commitment** to work with government to achieve this and that **government support will make a difference**.



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Closing presentation to the London Workshop

Industrial Strategy Challenge Fund

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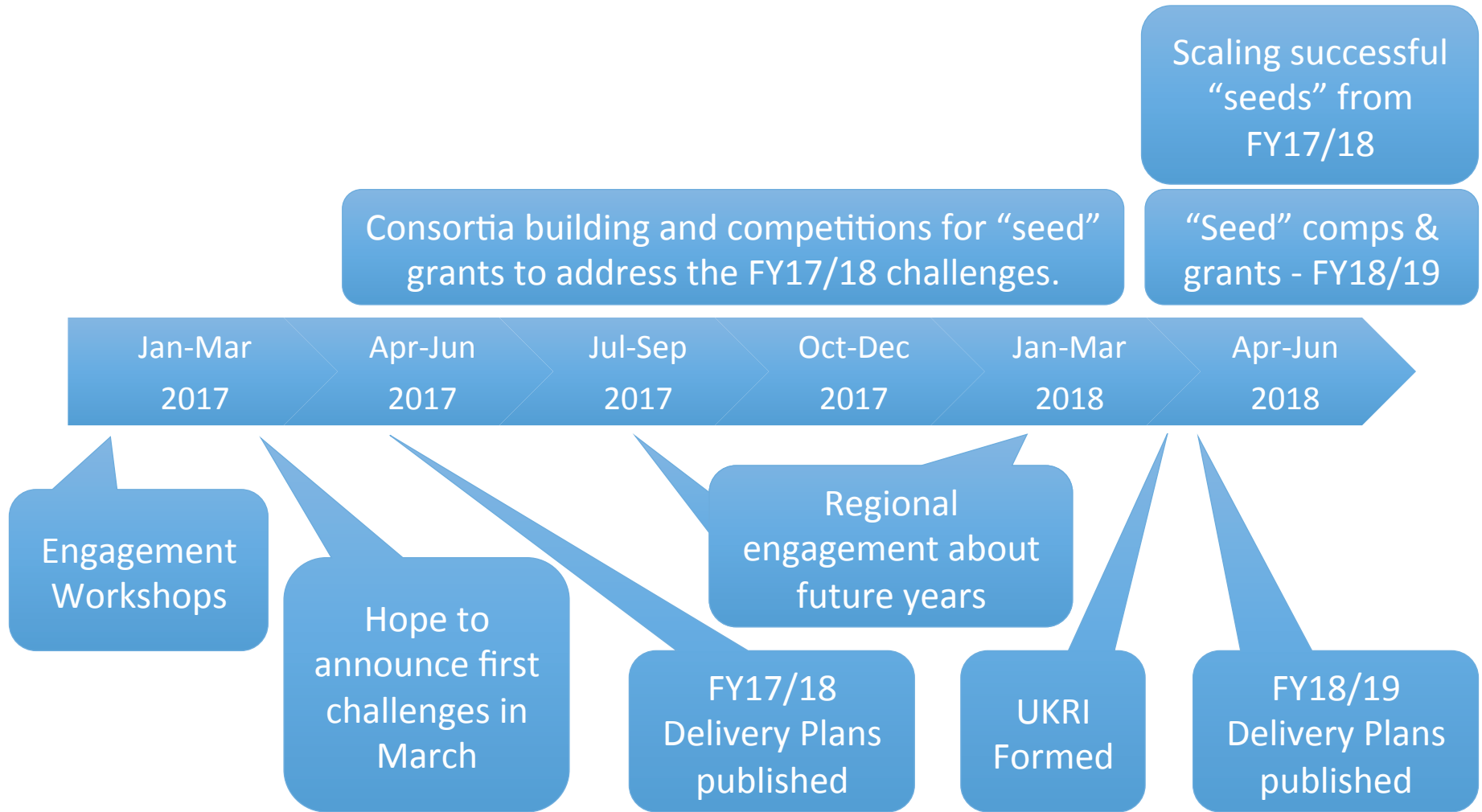
[Mike Biddle]

[18/01/17 – v3a]

What happens next with the Industrial Strategy Challenge Fund (ISCF)

- Part of Government's long term plan for research and innovation and there will be further opportunities to input during 2017
- This is the start of the engagement – not the end
- These workshops help inform our business case for Government
- An expert engagement in advance of the Green Paper
- Government will be publishing the Industrial Strategy Green Paper consultation soon #IndustrialStrategy

Looking further out...



If you have further thoughts...



- Join the Innovate UK Knowledge Transfer Network and sign-up for the newsletter at:
 - www.ktn-uk.co.uk
- Share them via the Innovate UK Knowledge Transfer Network at:
 - [link to follow]



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