

**Business Facilitation Advisory Committee
Food Business and Related Services Task Force**

*Introduction of the Hong Kong Applied Science
and Technology Research Institute Company Limited*

Purpose

This paper briefs members on the enabling resources for innovation and technology (I&T) available through the Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI).

Background

2. ASTRI was established in 2000, wholly owned by the Government with a mission to enhance Hong Kong's competitiveness in technology-based industries through applied research. In April 2006, the Government set up five Research and Development (R&D) Centres¹ to drive and co-ordinate applied research and development in selected focus areas. ASTRI was designated as the R&D Centre for Information and Communications Technologies.

3. To maintain continued relevance and market competitiveness in the digital economy, organisations in various industries strive to transform themselves with the application of new technologies. ASTRI welcomes the opportunity to brief members of the Food Business and Related Services Task Force on who ASTRI is, what it does and how it could help member organisations to create stronger socio-economic benefits through applied research.

ASTRI's Core Competence and Research Initiatives

4. ASTRI's applied research covers five key areas: **Smart City, Financial Technologies, Intelligent Manufacturing, Health Technologies** and **Application Specific Integrated Circuits**. Its core competence can be grouped in three categories

¹ <https://www.itc.gov.hk/en/rdcentre/rdcentre.htm>

of software and hardware-based technologies:

- (a) technologies that make our society more intelligent, e.g. Artificial Intelligence (AI), Big Data Analytics and robotics;
- (b) technologies that enable next generation connectivity for the public and businesses, e.g. pre-5G and 5G, Internet of Things (IoT) and various purpose-built communications systems; and
- (c) technologies that safeguard the trustworthiness of our communities, e.g. Distributed Ledger Technology or commonly known as Blockchain, cybersecurity and advanced biometric authentication.

5. Supported by a 650-member strong talent pool, ASTRI carries out applied research using a balanced model between “Technology Push” and “Demand Pull” –

- (a) Technology Push: developing technologies that can help industries in Hong Kong stay ahead of the curve;
- (b) Demand Pull: leveraging innovative applied research to help organisations in public and private sectors solve business problems.

Organizations, large and small, have benefited from ASTRI’s R&D services, resulting in more efficient operations, better customer experience and more meaningful societal impact.

6. Working closely with partners in the I&T ecosystems, ASTRI also acts as a bridge between the academia pursuing basic research and the industry applying those technologies, facilitating successful commercialisation of technologies into industries and the communities.

7. To-date, ASTRI has completed around 400 applied research projects with over 800 patents granted by offices in the United States, China and other jurisdictions. It has won numerous local, regional and global awards for its technological contributions, and most importantly, transferred over 700 technologies to various industries, public services organisations and regulatory bodies.

ASTRI’s Impactful Applied Research

8. Rising costs of labour, supplies, infrastructure and facilities are challenges commonly faced by business operators in Hong Kong. For those in retail operations, these challenges can be acute. To enhance abilities to grow revenues, businesses

constantly seek more intelligence about their customers' journey, and draw actionable insights to better attract, engage and retain them. To stay competitive at lower operating costs, businesses look for ways to further streamline operations, drive higher efficiencies and optimise supply chain. Specific to the food business and related services, upholding food quality standards to ensure customers' well-being is a top priority.

9. Leveraging big data analytics, AI and robotic technologies, ASTRI has helped industries improve production quality and efficiency, predictability as well as abilities to personalise services and marketing campaigns.

10. Using natural language processing and deep learning techniques, ASTRI has helped service organizations improve both customer-facing and back-end operations with AI-based voice and handwritten character recognition tools tailored for the Hong Kong environment.

11. Employing IoT, sensing and video analytic innovations, ASTRI has equipped operators with more accurate crowd management, way finding and behavioural analytic solutions. Using light spectrum analytic technology, ASTRI has invented cost effective solutions for authorities to check product composition and quality.

Collaborating with ASTRI

12. There are various funding programmes² available under the Innovation and Technology Fund (ITF) administered by the Innovation and Technology Commission, offering degrees of flexibility in terms of industry contribution, IP ownership and/or licencing to promote the application of innovative technologies to the industries. Working with ASTRI for R&D projects, business partners and clients may also be eligible for cash rebate³ as well as enhanced tax deduction⁴ against the R&D spending contributed towards research projects.

Recommendation

² <https://www.itf.gov.hk/l-eng/about.asp>

³ <https://www.itf.gov.hk/l-eng/crs.asp>

⁴ <https://www.itc.gov.hk/en/dlri/index.htm>

13. Members of the Task Force are encouraged to explore with ASTRI how innovative technologies could be applied in resolving their business pain points and enhancing their business operation. In case where technologies are readily available from ASTRI to address the needs, businesses are welcome to license existing IP rights from ASTRI for further commercialization. Otherwise, ASTRI can embark on new R&D initiatives leveraging funding schemes made available by the Government to help enhance the market competitiveness of the business.

Hong Kong Applied Science and Technology Research Institute Company Limited
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