

Intangible Assets & Intellectual Property (IA/IP) Skills Study

OVERVIEW OF STUDY



1

Understand the IA/IP skills landscape in Singapore by assessing current workforce demand and supply of IA/IP-skilled talent.

2

Focus on non-IA/IP jobs (e.g., research, engineering and business development) within the Human Health and Potential (HHP) and Smart Nation and Digital Economy (SNDE) sectors.

3

Support the **Singapore IP Strategy 2030 (SIPS 2030)** objective to create good job opportunities for Singaporeans.

Human Health Potential (HHP)

The Human Health Potential (HHP) sector is focused on establishing biomedical research capabilities, critical human capital and research infrastructure, aiming to generate both health benefits and economic value¹ in areas such as precision medicine, medtech and the learning sciences.

¹ – Research, Innovation and Enterprise 2025 Plan



Smart Nation and Digital Economy (SNDE)

The Smart Nation and Digital Economy (SNDE) sector aims to support the growth of our digital economy and industries and in alignment with national priorities.¹ This includes areas such as AI, cybersecurity, quantum engineering and technologies.



WHY ARE IA/IP SKILLS IMPORTANT?

Globally, investments in IA (e.g., branding, data and software) have grown.



3x faster²

than investments in physical assets over the past 15 years.

² – WIPO New Data show intangible asset investments growing fast, spreading globally



To fully capitalise on this growth, organisations and economies must possess the **right skills and capabilities** to translate IA/IP into economic outcomes.

This is especially so for innovation-driven sectors, including those within HHP (e.g., pharmaceuticals and biotechnology) & SNDE (e.g., cybersecurity and telecommunications).

DEFINING IA & IP

Intangible Assets (IA)

Refer to assets that are non-physical in nature, as opposed to physical assets such as machinery.

Non-Registrable IA/IP

Examples include:

- ❖ Trade Secrets
- ❖ Copyright
- ❖ Know-how
- ❖ Data

Registrable IP

Examples include:

- ❖ Trade Marks
- ❖ Patents
- ❖ Designs
- ❖ Plant Variety Rights

IP is a subset of IA and refers to creations of the mind (e.g., inventions, works of art, and logos).

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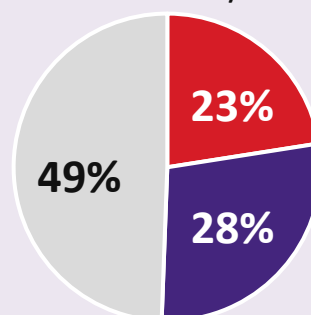


Within Singapore, demand for IA/IP skills is concentrated within HHP & SNDE, which makes up

~50%³ of all demand

3 - The dataset, sourced from LinkedIn, includes job postings from August 2022 to August 2024.

Distribution of demand for IA/IP skills in Singapore³



■ HHP ■ SNDE ■ Other Sectors in Singapore

IA/IP skills in demand and supply for Singapore's non-IA/IP jobs

TOP SKILL CLUSTERS IN DEMAND

- 1 Innovation Management
- 2 IP Management
- 3 IP in Business
- 4 IP Strategy
- 5 IP Licensing
- 6 Contracts and Agreements

TOP SKILL CLUSTERS IN SUPPLY

- 1 IP in Business
- 2 Innovation Management
- 3 IP Strategy
- 4 IP Enforcement
- 5 IP Management
- 6 IP Audit and/or Due Diligence

The top six IA/IP skill clusters in demand in Singapore are broadly consistent across various innovation hubs.⁴ This highlights the critical need for upskilling in IP Licensing and Contracts and Agreements to close the gap and foster innovation.

4 – Innovation Hubs in this study refer to Seattle, Austin, San Francisco, San Jose, and London.



Insights from Industry Experts

"I agree that **Innovation Management, IP Management, IP in Business and IP Strategy** are critical for success in the SNDE for non-IA/IP roles... Cultivating around these skills broadly across the workforce is essential for any country and especially for Singapore to truly thrive as a knowledge-based economy."

Raghunath Koduvayur, Chief Executive Officer, RAQS Quantum

"Companies have become more keenly aware that their IA/IP can be very valuable and needs to be protected. In many cases, hiring an employee who has experience and skills in these areas would be **a more cost-effective way to manage the company's IA/IP** than to engage a full-time IA/IP lawyer."

Brandon Chee, Project Manager of Biosense Diagnostics

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KEY TRENDS SURROUNDING IA/IP

Evolving Regulatory Pressures

- As more organisations expand globally, and with the rise of new technology and innovation, organisations need to be adept in **managing varied IA/IP laws**.

Relevant Skills: IP Enforcement, IP Management*

Technological Advancements

- Rise of AI leads to concerns around **ownership and regulatory frameworks** surrounding the use of AI-generated materials.
- Data, as a vital asset, must be **effectively protected and strategically leveraged** to unlock its full business value.

*Relevant Skills: Data and IP, IP Licensing**

Market Competition & Innovation as an Economic Driver

- Using IA/IP to drive **competitive positioning** and **improve financial performance**.
- Generating awareness** and understanding of what IA/IP is, and how to **harness its full potential**.

*Relevant Skills: IP Commercialisation, Innovation Management**

What does this mean for you?

1 ASSESS YOUR CURRENT AND FUTURE IA/IP NEEDS

With regulatory pressures and technological advancements, it is crucial to identify how IA/IP can support your business strategy and whether you are equipped to protect and leverage them.

2 EVALUATE EXISTING IA/IP ASSETS AND CAPABILITIES

Review your organisation's IA/IP assets in the context of market competition and innovation, how they are used, and where value is being (or could be) created from.

3 BUILD TARGETED IN-HOUSE CAPABILITIES

It is crucial to assess which IA/IP skills are most critical to develop in-house and deliver value – explore training opportunities where appropriate.

Acquiring IA/IP skills enables your organisation to achieve the BEST

B

Boost Sales Capabilities

Enhance capabilities in **IP Licensing*** skills to negotiate better agreements that elevate your competitive edge.

E

Enhance Innovation

Equip product and research teams with skills in **Innovation Management*** to drive creativity and translate ideas into commercially valuable outcomes.

S

Secure Competitive Advantage

Equip operations and support teams with skills in **Contracts and Agreements*** and **Trade Secrets Management** to safeguard IP assets.

T

Transform Management & Leadership

Equip management with tools and frameworks to develop **IP Strategy*** skills that can enhance business strategy.

**Found in Skills Framework for IP*

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OVERVIEW OF HUMAN HEALTH POTENTIAL



The Human Health Potential (HHP) sector is focused on establishing biomedical research capabilities, critical human capital and research infrastructure, aiming to generate both health benefits and economic value¹.

Sample Industries: Health & Biomedical Sciences, Pharmaceuticals & MedTech

¹ – Research, Innovation and Enterprise 2025 Plan (Page 19)



Fuelling Innovation in HHP with IA/IP

WHAT IS IA/IP?

Intangible Assets (IA)

Refer to assets that are non-physical in nature, as opposed to physical assets such as machinery.

Non-Registrable IA/IP

Examples:

- Trade Secrets
- Copyright
- Know-how
- Data

Registrable IP

Examples:

- Trade Marks
- Patents
- Designs
- Plant Variety Rights

IP is a subset of IA and refers to creations of the mind (e.g., inventions, works of art, and logos).

WHY ARE IA/IP SKILLS IMPORTANT TO HHP?

Driving Innovation:

The HHP sector thrives on research and innovation. Being able to manage IA/IP effectively not only secures organisations' competitive advantage but also creates an environment that fosters ongoing innovation and advancements.

Facilitate Strategic Collaborations:

The HHP sector relies on collaborations across diverse parties. Having a clear understanding and appreciation of IA/IP establishes trust and transparency among partners.

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What IA/IP Skill Clusters are in demand among employers in the HHP sector today?

These skill clusters were identified through job postings retrieved from LinkedIn and are the skill clusters that appeared most frequently within such postings.²



Innovation Management

Effective innovation management equips organisations to seize new opportunities early through a structured approach to idea generation, evaluation, and execution. This skill cluster is commonly sought in job postings for roles such as Scientists, Engineers, Researchers.

Innovation Hub Insights:
Innovation Management is one of the top skill clusters in demand in multiple cities such as Austin, San Jose, San Francisco, and Seattle.





IP Licensing

Effective IP licensing allows monetisation while retaining control over its use. It enhances the value of IP assets, foster collaboration, and drive innovation and competitiveness. This skill cluster is commonly sought in job postings for roles such as Business Development Managers.



IP Management

Effective IP management is crucial to prevent unauthorised use, mitigate risks of infringement, and ensure compliance with legal requirements. This skill cluster is commonly sought in roles such as Innovation Managers.

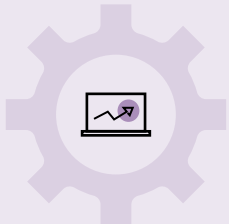
What emerging IA/IP Skill Clusters will employers in the HHP sector require in the future?

These skill clusters were identified through Foresight Workshops with industry experts, who highlighted skill clusters that they believe will grow in demand in the coming years.



Data and IP

As organisations harness AI and big data, protecting data and intellectual property (IP) is crucial. This includes managing data governance and ensuring compliance with ethical standards and ownership regulations for AI-generated materials.



Brand Management

With global expansion and technological change, organisations must safeguard their brand identity and reputation. Navigating diverse IP laws is essential for fostering collaboration and attracting investments.

Innovation Hub Insights:
Brand Management is a top demand skill cluster across multiple cities such as Austin, London, San Jose, San Francisco, and Seattle.





Trade Secrets Management

Organisations must protect trade secrets in sales and partnerships to maintain a competitive edge. Strategic disclosure of confidential information enhances market positioning and drives financial performance.

²- The dataset, sourced from LinkedIn, includes job postings from August 2022 to August 2024.

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HOW WOULD IA/IP SKILLS APPLY TO YOU?



Based on insights gathered from the Foresight Workshops, participants have identified the **key job roles within HHP that will benefit from developing IA/IP skills**. Discover how mastering IA/IP can unlock new opportunities and drive impactful results in these roles.



Sales and Business Development Roles

- **Enhance Competitiveness:** Understand competitors' IP portfolios to inform strategic positioning and market entry.
- **Articulate Value Proposition:** Communicate the value of the company's IP to stakeholders, enhancing sales pitches.
- **Enhance Negotiations:** Leverage knowledge of IA/IP to negotiate better terms in deals and contracts.

Examples of Job Roles: Business Development Director, Partnerships and Sales

IA/IP Skills required:
IP Management, Innovation Management*, Trade Secrets Management, Brand Management



Founders and Senior Management

- **Drive Value Creation:** Leverage IA/IP to enhance the company's worth.
- **Proactively Manage Risks:** Identify and mitigate legal vulnerabilities, protecting the organisation from risks.
- **Inform Strategic Decisions:** Guide mergers, acquisitions, and partnerships.

Examples of Job Roles: CEO, CTO, CFO

IA/IP Skills required:
Contracts and Agreements*, IP in Business*, IP Strategy*, Brand Management



Research and Data Roles

- **Protect Innovations:** Safeguard proprietary algorithms and models from competitors.
- **Harness Data Insights:** Leverage data as a key intangible asset for decision-making and innovation.
- **Ensure Compliance:** Adhere to IP laws and data protection regulations for ethical data use.

Examples of Job Roles: Data Engineers, Scientists, Innovation Specialists

IA/IP Skills required:
Innovation Management*, IP Management, IP Licensing*

GROW your business with IA/IP skills

G

Generate IP Assets

Use your knowledge of IA/IP and skills in **IP, Innovation and Trade Secrets Management** to generate new IP assets to increase the value of the business.

R

Realise Strategic Value

Embed **IP Strategy*** skills into business decisions to earn revenue, attract investors, enhance valuation, and future-proof your business model.

O

Optimise Innovation

Optimise innovation through collaborations and the use of **IP Licensing*** skills to gain an edge over competitors.

W

Win with Your Team

Develop good **Brand** and **IP Management*** skills to build strong IP portfolios that secure competitive advantages and contribute to business value.

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Support the **Singapore IP Strategy 2030 (SIPS 2030)** objective to create good job opportunities for Singaporeans.

OVERVIEW OF SMART NATION & DIGITAL ECONOMY



The Smart Nation and Digital Economy (SNDE) sector aims to support the growth of our digital economy and industries in alignment with national priorities.

Sample Industries: ICT & Media, AI, Cybersecurity, Quantum Trust Technologies, Communications

1 – Research, Innovation and Enterprise 2025 Plan (Page 31)



Fuelling Innovation in SNDE with IA/IP

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WHY ARE IA/IP SKILLS IMPORTANT TO SNDE?

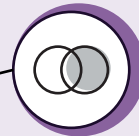


Stay ahead of the Innovation Curve:

The SNDE sector thrives on rapid innovation cycles, making IA/IP skills critical for turning new ideas into competitive advantage. Protecting new ideas early ensures organisations gain an edge and deters replication by competitors.

Navigate Risk & Ensure Compliance:

The SNDE sector faces risks like IP infringement and regulatory challenges. Strong IA/IP skills help organisations proactively mitigate these risks, protecting innovations and enhancing market reputation.



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What IA/IP Skill Clusters are in demand among employers in the SNDE sector today?

These skill clusters were identified through job postings retrieved from LinkedIn and are the skill clusters that appeared most frequently within such postings.²



Innovation Management

38% of job postings indicate a need for innovation management, but it is found only in 7% of SNDE profiles. This signals a supply gap for the skill in the sector.

Innovation Hub Insights:
Innovation Management is one of the top skill clusters in demand in multiple cities such as Austin, San Jose, San Francisco, and Seattle.



IP Management

22% of job postings indicate a need for IP management, but only 10% of SNDE profiles reflect this expertise. Organisations may struggle to find suitable candidates and may desire to upskill their employees.



IP in Business

Effective management of IP in business protects innovations and brands to support business growth. This skill is commonly sought in job postings for advisory-related roles or roles that help set strategy (e.g., Advisors, Strategy Managers).

What emerging IA/IP Skill Clusters will employers in the SNDE sector require in the future?

These skill clusters were identified through Foresight Workshops with industry experts, who highlighted skill clusters that they believe will grow in demand in the coming years.



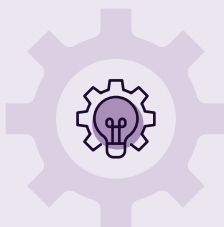
IP Commercialisation

Having IA/IP does not inherently create value unless it is effectively commercialised. Organisations need to recognise the importance of commercialising their IP and actively seek channels and opportunities to extract maximum value for the organisation and shareholders.



Trade Secrets Management

Trade secrets, including proprietary algorithms, processes, and customer data, offer a crucial competitive edge. Understanding what to disclose and what to protect ensures these valuable assets are safeguarded and leveraged strategically.



Innovation Management

Embedding innovation management into the organisational culture empowers employees at all levels to think creatively and confidently embrace experimentation.

²- The dataset, sourced from LinkedIn, includes job postings from August 2022 to August 2024.

HOW WOULD IA/IP SKILLS APPLY TO YOU?



Based on insights gathered from the Foresight Workshops, participants have identified the **key job roles within SNDE that will benefit from developing IA/IP skills**. Discover how mastering IA/IP can unlock new opportunities and drive impactful results in these roles.



Research and Innovation Roles

- **Guide Product & Service Development:** Inform product development and avoid infringement of others’ rights.
- **Maximising Value:** Identify commercialisation opportunities, turning innovation into tangible value.
- **Enhancing Collaboration:** Improve communication and negotiation around shared innovations and insights.

Examples of Job Roles: Innovation Specialists, Research Scientists, Product Developers

IA/IP Skills required: Innovation Management, Trade Secrets Management, IP Enforcement**



Founders and Senior Management

- **Drive Value Creation:** Leverage IA/IP to enhance the company’s worth.
- **Proactively Manage Risks:** Identify and mitigate legal vulnerabilities, protecting the organisation from risks.
- **Inform Strategic Decisions:** Guide mergers, acquisitions, and partnerships.

Examples of Job Roles: CEO, CTO, CFO

IA/IP Skills required: IP in Business, IP Management, IP Strategy**



Data and Technology Roles

- **Ensure IT protection:** Implement strong security measures to safeguard sensitive intellectual property from cyber threats and unauthorised access.
- **Drive Innovation with Data:** Identify opportunities to capitalise on data-driven insights and technologies to generate innovative ideas.

Examples of Job Roles: Data Engineers, Business Intelligence Analysts, Data Scientists

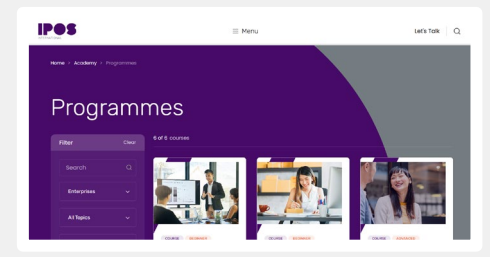


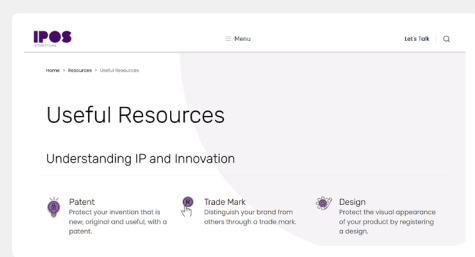
*IA/IP Skills required: Data and IP, Innovation Management**


Secure your EDGE with IA/IP skills




**Found in Skills Framework for IP*

Find out more about IA/IP, their relevant skills, and opportunities to upskill your workforce:



 [IPOS International Resources](#)

 [Skills Framework for IP](#)

 [IP Academy Programmes](#)


Explore these resources today!

Annex


Dataset Overview

The dataset, sourced from LinkedIn, includes job postings from August 2022 to August 2024 and job profiles extracted in December 2024.


IA/IP Skill Clusters

Brand Strategy


- Brand Equity Analysis
- Brand Identity Development
- Brand Management
- Brand Strategy

Confidential Information and/or Trade Secrets Management


- Trade Secrets Management

Contracts and Agreements


- Contracts and Agreements*

Data and IP


- Intellectual Property Cyber Security
- Intellectual Property Data Privacy and Security

Innovation Management


- Innovation Management*
- Invention Harvesting
- Technology Incubation*
- Technology Transfer*

IP Audit and/or Due Diligence


- Intellectual Property Audit and Due Diligence*

IP Commercialisation


- Intellectual Property Commercialisation
- Intellectual Property Monetisation*

IP Enforcement


- Digital Rights Management
- Infringement Analysis
- Intellectual Property Dispute Resolution*
- Intellectual Property Enforcement*
- Intellectual Property Insurance
- Intellectual Property Litigation*
- Intellectual Property Monitoring*
- Patent Office Action and Infringements*

IP in Business


- Business Opportunities Development*
- Intellectual Property Evaluation
- Intellectual Property Valuation

IP Intelligence


- Intellectual Property Intelligence*
- Intellectual Property Research
- Intellectual Property Search
- Patent Searching

IP Licensing

- Intellectual Property Licensing*

IP Management

- Artificial Intelligence and Machine Learning
- Intellectual Property Management
- Intellectual Property Process Optimisation
- Intangible Assets Management
- Intellectual Property Education and Training
- Intellectual Property Law*
- Intellectual Property Management Policies and Processes
- Intellectual Property Portfolio Management*
- Intellectual Property Taxation
- Patent Claim and Application Drafting*
- Patent Practice*
- Patent Prosecution
- Registered Design Application*
- Trade Mark Application*

IP Strategy

- Competition Law
- Intellectual Property Acquisition
- Intellectual Property and Patent Analytics
- Intellectual Property Divestitures
- Intellectual Property Mergers and Acquisitions
- Intellectual Property Strategy*
- Market Research*
- Patent Portfolio Development

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