Intellectual Property and Industrial Software in China

China offers opportunities for British software in a wide range of sectors. In order to fully benefit from these opportunities and maintain long-term competitiveness, it is important that British companies identify and mitigate intellectual property (IP) risk.

Opportunities for British software in China include those in:

- Financial technology (FinTech) and other financial services;
- Control and safety systems for power generation and other energy applications;
- Advanced manufacturing processes and industrial machinery;
- Transport infrastructure and vehicles;
- Agriculture technology (AgriTech);
- Operation of healthcare facilities, patient records management, diagnostics tools, medical devices and other healthcare applications;
- Education platforms; and
- Provision of government services.

Software can be offered as part of a service or be packaged with installed hardware.

Data and emerging technologies

China's prominence in many emerging technologies is leading to large-scale deployment of Artificial Intelligence (AI) and big data technology, cloud computing services and Internet of Things (IoT). The increasing importance of managing and analysing data in these and other projects is creating demand for high-quality software, including from the UK.

Intellectual property risk in China

The primary IP risk is that software will be copied or used beyond the terms of an agreement (including by affiliated companies in the Chinese supply chain). This includes substantial copying of code in competing products.

British companies preparing to provide software to projects or customers in China should identify IP risk at an early stage, and seek legal advice to ensure IP is sufficiently protected.

Regulatory compliance

A range of regulations could affect the structure of software-related business deals for British companies in China, which in turn can determine sources of IP risk.

For example, China's **foreign investment regime** may require British companies operating in certain sectors to work in joint venture arrangements with Chinese partners.

The Chinese **Cybersecurity Law** (enacted from June 2017) and related regulations provide a framework for Chinese government agencies to approve cross-border flows of data (or access to data hosted in China by overseas entities, including to run data analysis software). This especially applies to large volumes of personal data on Chinese citizens and data considered important for national security. Foreign companies may be barred from accessing data and winning contracts in sectors pertaining to China's broad definitions of national security, and be subject to law enforcement inspections.

Details of the criteria for government agencies to approve cross-border data transfer/access remain unclear, and measures to address regulator concerns (e.g., anonymisation of data) will be considered on a case-by-case basis.

As a result, British companies may decide to undertake China localisation of both data storage and analysis. This may overcome some regulatory uncertainty, but may create risk through the transfer of software to Chinese subsidiaries, joint venture companies or business partners.

In addition to Chinese regulations, British companies should also consider whether software sales in or transfer to China may violate **UK export control legislation**, including laws

covering technology with dual civil and military uses. More information is available from the [Joint Export Control Unit](#) (JECU) based in the Department of International Trade (DIT).

Relationships

IP risk can be mitigated by taking steps to align incentives with Chinese business partners and customers. For example, ensuring partners benefit from software updates, ongoing innovation or other services over the lifetime of a contract can reduce incentives to breach software licensing agreements or infringe.

Regular updates may also make copied code quickly obsolete. In some situations the risk of copied code may be low, including software used in safety critical applications (e.g., civil nuclear power plants), with potential infringers not prepared to take accountability for future failure.

British companies should consider how easy it is for their software to be copied, distributed and operated without their knowledge. It may be possible to prevent this through installation of technological protection measures to limit access to code, or to export secure "black box" components to be physically installed in hardware by the end user.

Copyright recordal

Companies should consider voluntary copyright recordal for software. Copyright protects the text of software code and related documents, but not the idea or effect that it achieves.

As China is signatory to international copyright treaties, recordal is not mandatory in order to benefit from copyright protection under Chinese law. However, copyright recordal can be helpful in establishing ownership of copyright in commercial negotiations, disputes or government administrative procedures.

Copyright recordal requires disclosure of some source code (typically the first and last 30 pages) to a Chinese government agency, but not to a public database. Disclosure is required in order to clearly identify the software code and establish ownership of copyright. Legal advice should be taken if this disclosure could be compromising.

If companies decide not to proceed with copyright recordal in China then legal advice should be sought from experienced China lawyers to prepare other documentation that proves copyright ownership. For more please see our factsheet [Copyright Recordal in China](#).

Patents, designs and trade marks

Like in other jurisdictions, patent protection is generally not available for pure computer programmes or algorithms in China. However, in recent years China has eased the scope of patentability for software-related inventions so:

- **Invention patent** protection may be available for a technical effect achieved by a computer programme operating on a machine-readable medium; and
- **Registered design** protection may be available for Graphical User Interfaces (GUI).

Checklist: Intellectual property and industrial software in China

- Identify the intellectual property (IP) risks of different business models in China. Seek advice from experienced China lawyers.

- Consider whether software is easily copied, distributed and operated without your consent. Structure business deals to minimise IP risk.

- Consider (voluntary) copyright recordal, or prepare documents that establish ownership of copyright in software. Registered IP rights are territorial: apply for patents, designs and trade marks in China. Ensure trade secrets are handled in accordance with Chinese law.

- Make sure contracts are suitable for China and are enforceable against your counterparty. Use Non-Disclosure Agreements (NDAs).

- Contracts should cover ownership of and access to any improvements to software transferred to China, including during localisation and installation.

- Consider escalation channels should Chinese government agencies or others impose unreasonable requirements on source code disclosure.

GUI protection is generally limited to a specified device (e.g., interfaces for medical devices or automotive electronics systems).

Trade mark protection should be secured in China for the names of all software products. Apply for English- and Chinese-language brand names and stylised logos. China has a large and systemic problem with pre-emptive, unauthorised trade mark applications by third parties. If you don't register it, someone else will.

For more information on IP registrations in China (including timescales and costs) please see our factsheet on [Intellectual Property in China](#). For more information on pre-emptive trade marks registrations see [Bad-Faith Trade Marks in China](#).

Trade secrets and know-how

Much of the value of software-related businesses lies in the know-how of engineers and other employees. Staff with access to commercially sensitive information often work closely with customers, including in locations where the software is installed.

Companies should be careful to ensure valuable know-how is protected and handled as trade secrets according to definitions in Chinese law. Employee training and contracts for Chinese staff should be structured appropriately.

For more on protecting know-how in China please see our factsheet [Trade Secrets in China](#).

Contracts

Legal advice should be sought from experienced China lawyers to ensure that all contracts take in to account Chinese law and industry practice. Ensure contracts are enforceable against your counterparty, including carefully considering language, jurisdiction and dispute resolution. Clearly define the scope of use of software and penalties for breach of these provisions.

Contracts should explicitly cover ownership of and access to any new software code developed in China, including during localisation or installation. The default assumption in China is that improvements are owned by the party that makes the improvements (usually a Chinese business partner or customer).

Non-Disclosure Agreements (NDAs) should be used during early-stage negotiations, and during demonstration projects or proof-of-concept. For template NDAs for China see our [UK-China Research & Innovation Non-Disclosure Agreement](#) or [UK-China Film and TV Toolkit](#).

Enforcement

Enforcement against leakage or copying of software may take the form of civil litigation or arbitration based on breach-of-contract provisions. These cases will proceed according to provisions in the underlying contract.

Under Chinese law, copyright infringement covers:

- **Copying software**, including incorporating substantial elements of code in to competing products. This is proved by comparing source or object code, and demonstrating infringers had access to the legitimate source code;
- **End user liability** incurred during unauthorised use of pirate software for commercial purposes; and
- **Unauthorised sale of activation codes**, typically via e-commerce platforms and addressed via notice-and-takedown.

Cases can be filed in the civil courts or with administrative enforcement agencies. Criminal prosecution for copyright piracy is rare, but may be pursued against large-scale distributors of pirate software.

For more information on enforcing IP in China please see our factsheet on [Intellectual Property in China](#). For more on enforcing copyright please see our factsheet on [Administrative Enforcement of Copyright in China](#).