Software contracts and liability

- A contract is simply an agreement between two or more persons (the parties to the contract) that can be enforced in a court of law.
- Contract law is largely based on common law.
- It has a long history and is well adapted to handling the disputes that arise in fulfilling commercial agreements.

Essentials for a contract

- all the parties must intend to make a contract;
- all the parties must be competent to make a contract, that is, they must be old enough
- and of sufficiently sound mind to understand what they are doing;
- there must be a 'consideration', that is, each party must be receiving something and providing something.

FIXED PRICE CONTRACTS FOR BESPOKE SYSTEMS

- The first type of contract we shall consider is the type used when an organization buys a system configured specifically to meet its needs. Such systems are known as tailor-made or bespoke systems.
- A fixed-price contract means that the total cost of the bespoke system is agreed upon upfront. The price does not change regardless of the actual time, effort, or resources required to complete the system.
- These contracts are commonly used for bespoke systems because they define the cost which helps organizations plan their budgets.

Fixed Contract example:

- A large-scale system for a global organization: Thousands of PCs deployed across 50 offices worldwide.
- **Wide-Area Network (WAN):** Connecting these offices for real-time communication and data sharing.
- **Database Servers:** Storing and managing vast amounts of data for the organization.
- **Million lines of custom-written software:** Applications designed to handle unique business processes, such as supply chain management, customer relationship management, or enterprise resource planning.

Implication in Contracts:

- Contracts for bespoke systems typically define:
- The exact requirements and specifications.
- Timelines for development and delivery.
- Ongoing maintenance and support provisions.
- Responsibilities for both the client and the provider.

Bespoke system

- **A short agreement**, which is signed by the parties to the contract: This states who the parties are and, very importantly, say that anything that may have been said or written before does not form part of the contract.
- **The standard terms and conditions**, which are normally those under which the supplier does business; and
- **A set of schedules or annexes**, which specify the particular requirements of this contract, including what is to be supplied, when it is to be supplied, what payments are to be made and when, and so on.

Issues in contract

- What is to be produced
- What is to be delivered
- Ownership of rights
- Confidentiality
- Payment terms
- Penalty clauses
- Obligations of the client
- Standards and methods of working

1) What is to be produced

- The contract must state what is to be produced.
- requirements specification

The reference to the requirements specification must identify that document uniquely; normally this will mean quoting a date and issue number.
Problem: Any changes needed during the contract life

2) What is to be delivered

- The following is a non-exhaustive list of possibilities:
- source code;
- command files for building the executable code from the source and for
- installing it;
- documentation of the design and of the code;
- reference manuals, training manuals, and operations manuals;
- software tools to help maintain the code;
- user training;
- training for the client's maintenance staff;
- test data and test results.

3) Ownership of rights

The contract must also state just what legal rights are being passed by the software house to the client under the contract. Ownership in physical items such as books, documents or disks will usually pass from the software house to the client, but other intangible rights, known as intellectual property rights, present more problems.

4) Confidentiality

- when a major bespoke software system is being developed, the two parties will acquire confidential information about each other.
- None of the parties would like the other to disclose its secrets.
- It is usual in these circumstances for each party to promise to maintain the confidentiality of the other's secrets, and for express terms to that effect to be included in the contract.

5) Payment terms

- a pattern of payments such as the following must be included:
- an initial payment of, say, 15 per cent of the contract value becomes
- Due on signature of the contract; further stage payments become due at various points during the development, bringing the total up to, say, 65 per cent;
- a further 25 per cent becomes due on acceptance of the software;
- the final 10 per cent becomes due at the end of the warranty period.

6) Calculating payments for delays and changes

- Both sides of the parties may create little or high loss regarding unable of meeting the
  timeline. Thus extra work has to be indulged producing extra payments
- The contract must specify the process by which these extra payments are to be
  Calculated.

7) Penalty clauses

The previous subsection dealt with compensation for delays caused by the client; delays caused by the supplier are handled differently.
Delays in delivering working software are notoriously common; it is expected that contracts for the supply of software would normally include such a penalty clause. There are three reasons for this:

- Suppliers are reluctant to accept penalty clauses and anything stronger than the example quoted above is likely to lead to reputable suppliers refusing to bid.
- If the contract is to include penalty clauses, the bid price is likely to be increased by at least half the maximum value of the penalty.
- If the software is seriously late and penalties approach their maximum, there is little incentive for the supplier to complete the work since they will already have received in-stage payments as much as they are going to get.

8) Standards and methods of working

The supplier is likely to have company standards, methods of working, quality assurance procedures, and so on, and will normally prefer to use these. More sophisticated clients will have their own procedures and may require that these be adhered to. In some cases, the supplier may be required to allow the client to apply quality control procedures to the project.
The contract must specify which is to apply.

9) Warranty and maintenance

1. Warranty Period:

After a software product has been accepted, it is common to offer a warranty period of typically 90 days.

During this period:

- Any errors or faults in the software reported by the client will be corrected free of charge.
- The specifics of the warranty period are often subject to negotiation:
- Reducing or eliminating the warranty period lowers the overall contract cost.
- Prolonging the warranty period increases the contract cost.

2. Maintenance After the Warranty Period:

Once the warranty period expires, the client may request or the supplier may offer ongoing maintenance services. Key points about maintenance:

- **Nature of Maintenance:**
- It typically involves enhancements to the software, not just fault corrections.
- The resources needed for future enhancements are unpredictable, as neither party can foresee the client's requirements years in advance.

- **Pricing for Maintenance:**
- A fixed price is not suitable due to the uncertainty of future needs.
- Maintenance is generally charged on a time and materials basis, meaning the client pays based on the time spent and resources used.
- To ensure the supplier retains knowledge of the system, the client might be required to commit to purchasing a fixed number of maintenance days per year.

10) Inflation

In lengthy projects or projects where there is a commitment to long-term maintenance, the supplier will wish to ensure protection against the effects of unpredictable inflation. To handle this problem, it is customary to include a clause which allows charges to be increased in accordance with the rise in costs.

The clause should state how often (once a year, twice a year) charges can be increased and how the effect on the overall price is to be calculated.

11) Termination of contract

There are many reasons why it may become necessary to terminate a contract before it has been completed. It is not uncommon, for example, for the client to be taken over by another company that already has a system of the type being developed, or for a change in policy on the part of the client to mean that the system is no longer relevant to its needs. It is essential, therefore, that the contract make provision for terminating the work in an amicable manner. This usually means that the supplier is to be paid for all the work carried out up to the point where the contract is terminated, together with some compensation for the time needed to redeploy staff on other revenue-earning work. The question of ownership of the work so far carried out must also be addressed.

12) Arbitration

An arbitration clause will usually state that, if arbitration is required, it will take place in accordance with the Arbitration Act 1996. This Act of Parliament lays down a set of rules for arbitration that cover many eventualities, and reference to it avoids the need to spell these out in detail; most of the provisions of the Act are optional, in the sense that they come into effect only if the contract contains no alternative provision.

13) Applicable law

Where the supplier and the client have their registered offices in different legal jurisdictions or performance of the contract involves more than one jurisdiction, it is necessary to state under which laws the contract is to be Interpreted.

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CONSULTANCY & CONTRACT HIRE

Consultancy

- End product of a consultancy project is usually a report or other document.
- Under normal circumstances, a fee for IT consulting is measured on a per-day, per-consultant basis.
- Fixed fee IT consulting contract applies to projects which are well defined.
- Open-ended consultancy models generally favour the consulting firm, as the consultancy firm is rewarded on a per day basis, there is no incentive to complete assignments within a fixed time. The result often being risk of the project and cost overrun.
- A contract is very simple.

Contract hire

- The supplier's responsibility is limited to providing suitably competent people and replace them if they become unavailable.
- The staff works under the direction of the client.
- Payment is based on a fixed rate for each day worked.
- Ownership of intellectual property rights generated in the course of the work may need to be addressed.

There are four important aspects of a consultancy contract:

1) Confidentiality: Consultants are often in a position to learn a lot about the companies for which they carry out assignments and may well be in a position to misuse this information for their profit.

2) Terms of reference: The contract must refer explicitly to the terms of reference of the consultancy team and, in practice, these are perhaps the most common source of disagreements in consultancy projects. As a result of their initial investigations, the consultants may discover that they need to consider matters that were outside their original terms of reference but the client may be unwilling to let this happen, for any one of several possible reasons;

3) Liability: Most consultants will wish to limit their liability for any loss that the customer suffers as a result of following their advice. Customers may not be happy to accept this and, in some cases, may insist on verifying
that the consultant has adequate professional liability insurance.

4) Who has control over the final version of the report: It is common practice for the contract to require that a draft version of the final report be presented to the client. The client is given a fixed period to review the report and, possibly, ask for changes. The revised version that is then submitted by the consultant should be the final version.

Time and Materials

A time and materials contract (often referred to as a 'cost plus' contract) is somewhere between a contract hire agreement and a fixed-price contract. The supplier agrees to undertake the development of the software in much the same way as in a fixed-price contract, but payment is made based on the costs incurred, with labor charged in the same way as for contract hire. The supplier is not committed to completing the work for a fixed price, although a maximum payment may be fixed beyond which the project may be reviewed.

OUTSOURCING

Outsourcing, sometimes known as facilities management, is the commercial arrangement under which a company or organization (the customer) hands over the planning, management, and operation of certain functions to another organization (the supplier). IT outsourcing contracts are inherently complex and depend very much on individual circumstances. The following is a list of just some of the points that need to be addressed:

Key points of outsourcing

- how is performance to be monitored and managed;
- what happens if performance is unsatisfactory;
- which assets are being transferred;
- staff transfers;
- audit rights;
- contingency planning and disaster recovery;
- intellectual property rights in software developed during the contract;
- duration of the agreement and termination provisions.

HEALTH AND SAFETY

The ones that are of particular concern to software engineers are:

- provision and maintenance of safe plant;
- provision and maintenance of safe systems of work;
- provision of such information, instruction, training, and supervision as necessary;
- ensuring the workplace is maintained in a safe condition;
- provision and maintenance of a safe working environment and adequate welfare arrangements.

The Act also requires employers to ensure that their activities do not expose the general public to risks to their health and safety.

Manufacturers of equipment to be used at work also have a responsibility to ensure that it is safe.

Intellectual property rights

Intangible property is known as intellectual property. It is governed by a different set of laws, concerned with intellectual property rights, that is, rights to use, copy, or reveal information about intellectual property.
Intellectual property crosses national borders much more quickly than tangible property and the international nature of intellectual property rights have long been recognized.
The **international law** relating to trademarks and patents is based on the **Paris Convention**, which was signed in **1883**. **The Berne Convention**, which is the basis of international copyright law, was signed in **1886**.
Changes in technology & the commercial developments that follow them present the law with new problems. The law relating to intellectual property rights is evolving very rapidly and most of this evolution is taking place in a global or regional context.

TYPES OF INTELLECTUAL PROPERTY RIGHTS

- copyright
- patents
- confidential information
- trademarks
- design rights
- moral rights.

1) Copyright

Copyrights, as the name suggests, is concerned with the right to copy something.
It may be a written document, a picture or photograph, a piece of music, a recording, or many other things, including a computer program

Software copyright

- The 'something' is known as the work. Only certain types of work are protected by copyright law.
- The types that concern us here are 'original literary, dramatic, musical or artistic' works.
- The 1988 Copyright Design and Patents Act states that the term 'literary work' includes a table or compilation,

a computer program, preparatory design material for a computer program and certain databases.

Owner's rights

- the right to copy the work;
- the right to issue copies to the public;
- the right to perform, play or show the work to the public;
- the right to broadcast the work or transmit it on a cable service;
- the right to adapt the work.

Who owns the copyright?

Copyright is owned by the author(s) of the work except that:

- If the author is an employee and the work is an original literary, dramatic, musical or artistic work created in the course of employment, then the copyright belongs to the employer.
- An independent contractor is not an employee and so will own the copyright in work he does unless agreed otherwise.
- Copyright can only be transferred in writing.
- Copyright does not need to be registered. It comes into existence at the moment the work is recorded, in writing or otherwise.

Copyright Case Studies

1)Authors Guild v. Google, Inc. (2015): The Authors Guild sued Google over its Google Books project, which scanned millions of books and made portions of them searchable online. Google argued that its use was fair use, as it was transforming the content to create a searchable database, which would help users discover books.

2)Google Inc. v. Oracle America, Inc. (2021): Oracle sued Google, claiming that Google had copied Java's API (Application Programming Interface) code when developing the Android operating system. Oracle argued that Java's API was copyrighted and that Google's use of it without a license was infringement. Google, on the other hand, argued that its use was fair use, as it involved using the Java code to create a new platform that was transformative.

Infringement of copyright

Anyone who, without permission, does one of the things that are the exclusive right of the copyright owner is said to infringe the copyright.

Primary infringement takes place whenever any of the exclusive rights of the copyright owner is breached. It is a matter for the civil courts and the usual remedies are available: a claim for damages or an injunction to refrain from the infringement are the most likely.
Secondary infringement occurs when primary infringement occurs in a business or commercial context.
In the case of software, this could involve trading in pirated software or it could involve using pirated software within a business.

Or

Websites like YouTube or Facebook have faced secondary infringement claims for hosting user-uploaded content that includes copyrighted works (like movies, music videos, or TV shows). Even if the platform itself doesn't upload the content, if it has actual knowledge of infringement and doesn't take it down or prevent it, it can be held liable for secondary infringement.

Primary infringement is purely a civil matter. Secondary infringement can be a criminal offense.

When is a copy a "copy"?

- Copyright is breached by copying 'the whole or a substantial part of the work'.
- 'Substantial' can also mean just a key part, which could be quite small.
- Non-literal copying, e.g. using the same design to produce a similar system written in a different language.

Difference between License and contracts

Aspect	License	Contract
Purpose	Grants permission for use.	Establishes mutual obligations.
Ownership	Ownership remains with the licensor.	Ownership may transfer (e.g., goods or services).
Legal Nature	Non-transferable unless specified.	Enforceable agreement between parties.

Scope	Limited usage rights.	Can cover any agreed-upon terms.
Examples	Software license, music rights.	Employment, sales agreement.

License:

- A license is primarily about permission, often for using intellectual property or assets.
- A contract is a broader agreement that can cover obligations, exchanges, and commitments between parties.

Licensing

- A license allows (the licensee), to use a work for some or all purposes but the owner retains ownership.
- Licenses can be exclusive or non-exclusive.
- The license may be for a fixed period or it may be in perpetuity.
- An **exclusive license** is ideal for someone seeking sole rights to a property
  (e.g., a book publisher or film producer).
- A **non-exclusive license** works for situations where multiple parties can use the same property without exclusivity (e.g., software or stock images).

Examples of licences:

- **Retail software:** a license in perpetuity to use one copy of the software on a computer of your choice. Non-exclusive.
- **Professional packages:** one-year license, renewable, to run the software on a server with a specified maximum number of simultaneous users. Non-exclusive.
- **Marketing agreements:** exclusive license to sell sub-licenses in a specified geographical area

2) Patents

A patent is a temporary right, granted by the state, enabling an inventor to prevent other people from exploiting his invention without his permission. However, the protection it gives is much stronger than copyright, because the grant of a patent allows the person owning it (the patentee) to prevent anyone else from exploiting the invention, even if they have discovered it for themselves.

Feature	Patent	Copyright
Copyright	Protects inventions and industrial designs.	Protects creative and artistic works.
What It Covers	New processes, machines, devices, or designs.	Books, music, films, art, software, etc.
Requirements	Must be new, useful, and non-obvious.	Must be original and fixed in a tangible form.
Duration	15–20 years (depending on the type).	Life of the creator + 70 years (or more).
Protection Scope	Prevents others from making, using, or selling the invention.	Prevents unauthorized reproduction, distribution, or display.
Examples	A new type of engine, a drug formula.	A novel, a movie, or a song.

Patents….

Patents were originally intended to encourage new inventions, and in particular to encourage the disclosure of those new inventions.

After the monopoly period expires, everyone else is free to practice the invention. And because of the disclosure made by the inventor, it is very easy to do so.

A patent may only be granted if:

- The invention is new
- It involves an inventive step
- It is capable of industrial application
- The subject matter of the invention does not fall within an excluded class

Excluded class

- **Scientific theories**: The theory of gravity cannot be patented although a machine that uses it in a novel way could be.
- **Mathematical methods**: This means, for example, that the methods used for carrying out floating point arithmetic cannot be patented. A machine that uses the ideas can however be patented.
- **A literary, dramatic, musical or artistic work** or any other aesthetic creation: As we have already seen, these are protected by copyright.
- **The presentation of information**: Again this is covered by the law of copyright.

- **A scheme, rule or method for** performing a mental act, playing a game or doing business, or a program for a computer.

Software patents

A software patent does not cover the software's code itself (this is typically protected by copyright) but rather the underlying process, system, or method.

For example, a new algorithm for improving image processing speed in medical imaging software could potentially be patented if it's a novel, non-obvious, and technically complex solution.

The European Patent Office has been granting patents for software since 1998, as has the UK Patent Office.

Example: A patent might be granted for an MRI machine that includes software designed to improve the clarity of scanned images. Here, the software is not "software as such" but part of a system with a tangible, technical application. The software plays a critical role in the functioning of the MRI machine and provides a new solution for enhancing image clarity. This contribution makes the invention as a whole eligible for a patent.

Parts of the patent

- **INID Codes(Internationally agreed Numbers for the Identification):** an international system that allows elements on the patent cover page to be identified in all languages
- **Claims** - phrases that precisely define the invention and outline the boundaries of the claimed invention (prevents infringement)
- Patent holders receive exclusive rights to make, use, or sell a utility, design, or plant.
- The patentee must file a detailed description of the invention which is published by the government.
- Public disclosure provides a reservoir of technical information.
- Some companies prefer to protect their inventions called Trade Secrets kept private to maintain a company's competitive advantage.

Types of patents

- **Utility patents** may be granted to anyone who invents a machine, vital process, composition of matter, article of manufacture or any useful improvement thereof.
- **Design patents** may be granted to anyone who creates a new, original design for an article of manufacture
- **Plant patents** may also be granted to anyone who creates or discovers or reproduces any distinct and new variety of plant (Genetic Modification).

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3) TRADEMARKS AND TRADE NAMES & PASSING OFF

- A trademark is a word, phrase, symbol, or design, or a combination of words, phrases, symbols, or designs, that identifies and distinguishes the source of the goods of one party from those of others.
- Examples – Reebok, McDonald's, Nike, Levis, etc.

- The **Trade Marks law** is contained in the **Trade Marks Act, of 1999 and 1994 which states that:**

"Any sign capable of being represented graphically which is capable of distinguishing goods or services of one undertaking from those of other undertakings. A trade mark may, in particular, consist of words (including personal names), designs, letters, numerals or the shape of goods or their packaging."

- Trademarks must be clear and distinct from each other
- A trademark may also be three-dimensional (e.g. neck of the bottle)
- Comparative advertising is allowed
- Even where a trade mark is not registered, action can be taken in the civil courts against products that imitate the appearance or 'get up' of an existing product. This is known as the tort of **'passing off'.**

❖ **To register a trademark, the mark must be:-** distinctive, and, not deceptive, or contrary to law or morality, and, It must not be identical or similar to any earlier marks for the same or similar goods.

Trademarks can be …

- Words eg Coca Cola
- Phrases eg "Have it your way"
- symbols
- Sounds

Trademark Numbers (586)

- Intel learned that they cannot trademark numbers themselves
- Pentium can be trademarked
- You can trademark as:
- 7-Up

- Three-peat (winning three consecutive championships)

For example: CD PLAYER

- Industrial design protection for 3D shape
- Brand name registered under trademark
- Music played on the CD player is protected by copyright.
- Various technical parts & mechanisms are subject mater of protection under Patents

For example: Pressure Cooker

"PATENT" For every individual improved mechanism
"DESIGN" For outer shape & Contour / Configuration
"TRADE MARK" Brand name or Logo for goods denoted as ®
"Copyright" For Instruction / manual booklet denoted as ©

Selecting a Mark!

(**a) Generic terms:** common name of the article or services to which they are applied. They are not protectable as stand-alone trademarks. (Examples: computer, automobile, shuttle.)
(**b) Suggestive Marks:** suggest, rather than describe, the goods or services or some characteristic thereof. Consumers must use imagination or hindsight to understand the connection. Although suggestive marks are self-advertisers and, thus, easier to promote than arbitrary marks, they are subject to more conflict and may be afforded a narrower scope of protection.
Thus, while KODAK has no competition from any mark anywhere close to it, BURGER KING must coexist with WHATABURGER and other restaurants that use the word BURGER.
(c) Arbitrary Marks: created from existing words, but have no meaning about the goods or services with which they are used. Fanciful and arbitrary marks are easier to protect but can be
more expensive to promote. (Examples: APPLE for computers and TIDE for detergent).
(d) Fanciful Marks: created from words that are coined or made up, and have no meaning to the goods or services. (Examples: KODAK for film and EXXON for petroleum products).

Difference between Service Marks and Trademarks

- A trademark is the brand name of the goods
- A service mark, just as the name implies, identifies the name, logo, device or a combination of these to differentiate the service provided by one business to that of the others.
- The main difference between a service mark and a trademark is that a trademark is applicable for use only to identify products or goods produced by a business. On the other hand, a service mark is used to exclusively identify a service.

Examples of Service Marks and Trademarks
Examples of businesses that use Service Marks (SM) are banking, insurance & transportation services etc.

Domain Names

- ICANN [Internet Corporation for Assigned Names and Numbers] is an internationally organized, non-profit making corporation. Its main responsibility is ensuring the 'universal resolvability' of internet addresses.
- That is, ensuring that the same domain name will always lead to the same internet location wherever it is used and whatever the circumstances.
- In practice, ICANN delegates the responsibility for assigning individual domain names to other bodies, subject to strict rules.
- The potential for conflict between trade marks and domain names is inherent in the two systems. Trade marks are registered with public authorities on a national or regional basis.
- The owner of the trade mark acquires rights over the use of the trade mark in a specific country or region. Identical trade marks may be owned by different persons in respect of different categories of products.
- Domain names are usually allocated by a private organization and are globally unique;
- This means that if different companies own identical trademarks for different categories of products or different geographical areas, only one of them can have the trademark as a domain name, and that will be the one who has applied first.
- **Cybersquatting**: The inconsistencies between two different systems of registration has made it possible for people to register, with their own domain names, for the trademarks belonging to some other company. They then

offer to sell these domain names to the owner of the trade mark at an inflated price.

- It is usually cheaper and quicker for the trade mark owner to pay up than to pursue legal remedies, even when these are available.

CONFIDENTIAL INFORMATION

- The critical point is that the information must have been given to that person in circumstances that give rise to what is known as an **obligation of confidence.**
- Rights of confidentiality are not intellectual property rights under **UK law** but are often treated in a similar way.
- It is common for an obligation of confidence to come into existence as a result of a specific clause in a contract.
- Non-disclosure agreements are agreements that are specifically intended to set up obligations of confidence.
- It is common, for example, when two companies are discussing possible col laboration, for each side to sign such a non-disclosure agreement to protect the information that they exchange.
- One important aspect of confidential information relates to ideas that are likely to be the subject of a patent application.
- Because the application may be rejected if it can be shown that the ideas had already been made public, it is important that the inventor only discusses them in conditions where an obligation of confidence exists, whether this is through the signing of a non disclosure agreement.
- **Another important example** of confidential information is information about current sales prospects. In practice, not many software companies have the type of trade secrets the disclosure of which would cause them serious damage. However, at any time, nearly all of them will be engaged in sales negotiations with a range of prospective customers and a knowledge of the content of these negotiations could certainly enable a competitor to gain a considerable advantage.
- Confidential information is not at all the same thing as professional skill and expertise.
- An obligation of confidentiality is not absolute. A court may rule that it is in the public interest that certain confidential information is disclosed.
- Over the years, there have been a number of well-publicized instances in which employees have disclosed confidential information about malpractice on the part of their employer.

Public Interest Disclosure Act:

- In **1998**, Parliament passed the **Public Interest Disclosure Act**, which provides some protection for employees in these circumstances. First, the Act defines what sort of disclosure of information is covered.
- Disclosure act reasonably believes shows that one or more of the following has occurred or is about to occur:
  - a criminal offence;
  - failure to comply with a legal obligation;
  - a miscarriage of justice;
  - danger to health and safety;
  - environmental damage;
  - information showing that any of these has been concealed

A worker making a qualifying disclosure will only be protected against victimization if the disclosure is made in the right circumstances. In this case, the disclosure is known as a protected disclosure