



Decrypting Software Patents

Key Insights for IP Success

ASHLEY SLOAT, Ph.D. | September 16, 2021

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Software **growth** trajectory

\$180 bn

AI-powered
market will
grow to \$180
billion by 2025

\$209.2 bn

Global AR and
VR market by
2022

\$6.72 bn

Global Edge
Computing market
by 2022

50 bn

IoT devices in use
worldwide by 2030

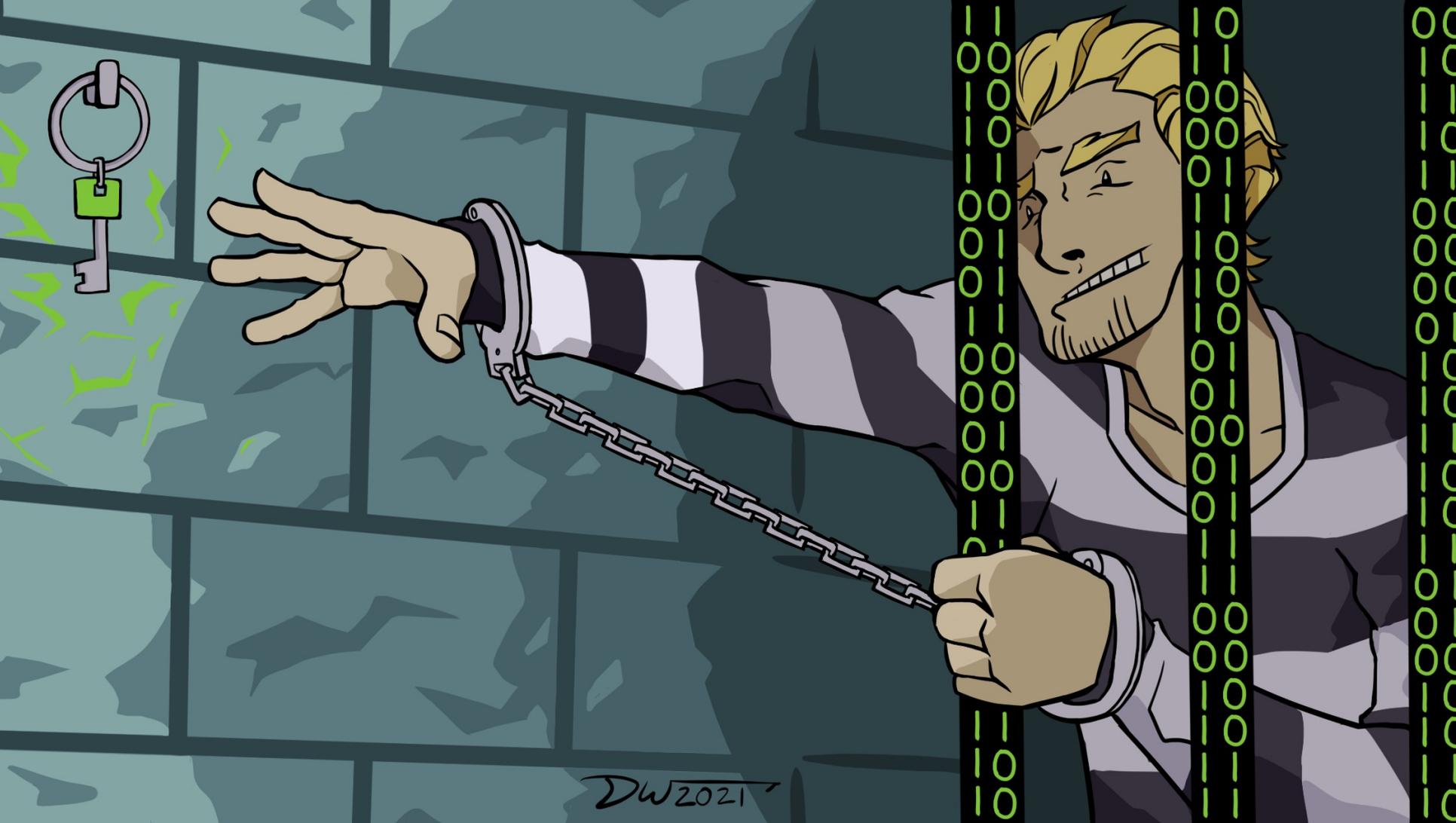
The value of a patent

- **Goal:** Maximize use of funding, grow, and protect your IP from being copied.
- **Patents** are the strongest form of protection and one of the best possible returns on investment.

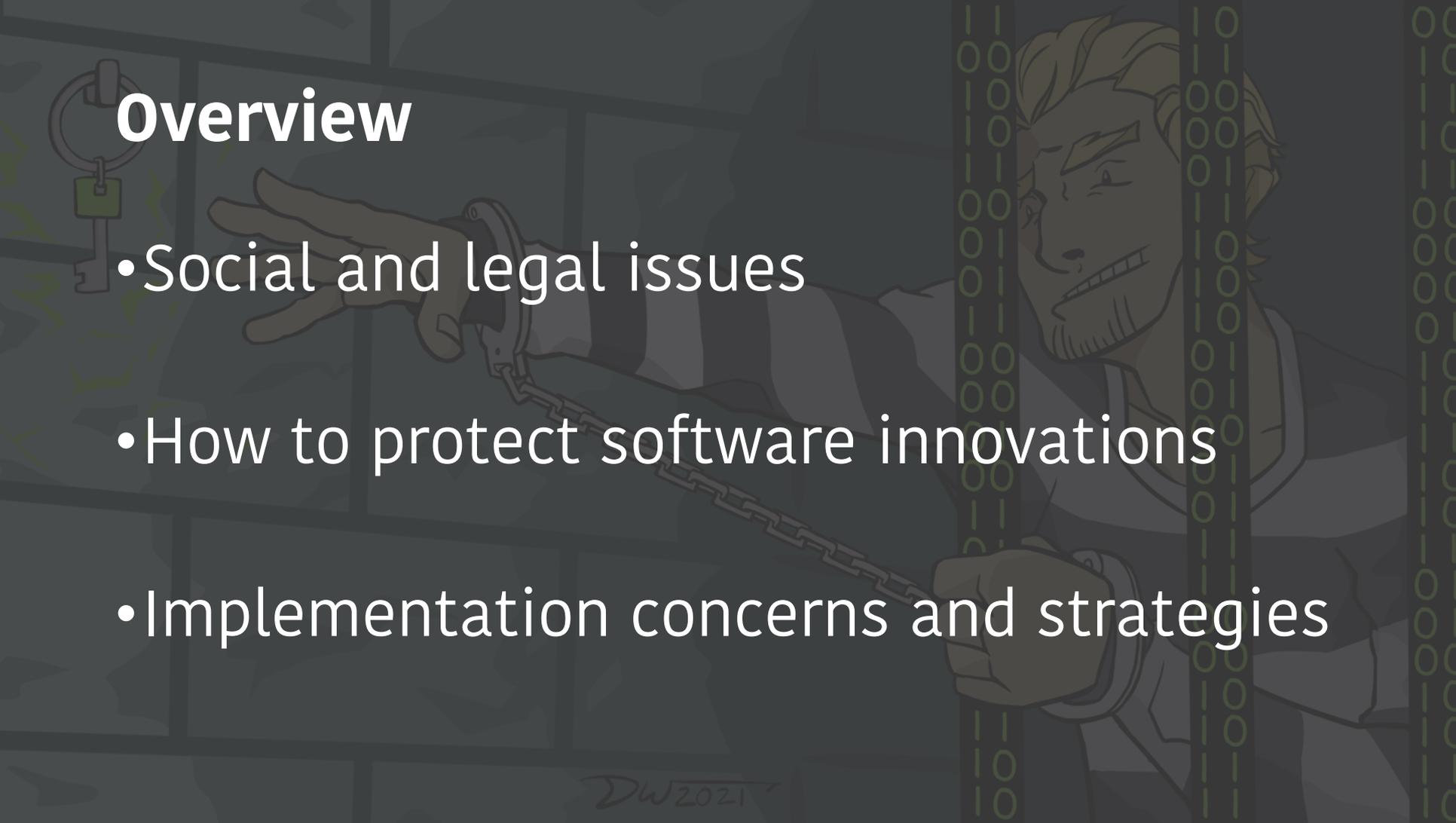
\$338,000
median portfolio
value with
1 issued
patent

\$1.1 MM
avg valuation
per patent in
software co
IPOs

35X
higher growth
for companies
that apply for
patents



DW2021



Overview

- Social and legal issues
- How to protect software innovations
- Implementation concerns and strategies



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- **Social and legal issues**

- How to protect software innovations

- Implementation concerns and strategies

The dynamics: A stormy history, unsettled

Socially

- Common desire to promote software access and development
- Some believe that **patents** accomplish this
- Some believe that **open-source software** accomplishes this

Legally

- 2014 *Alice v. CLS Bank* Supreme Court decision turned software patenting on its head
- Additional caselaw has only further complicated software patenting

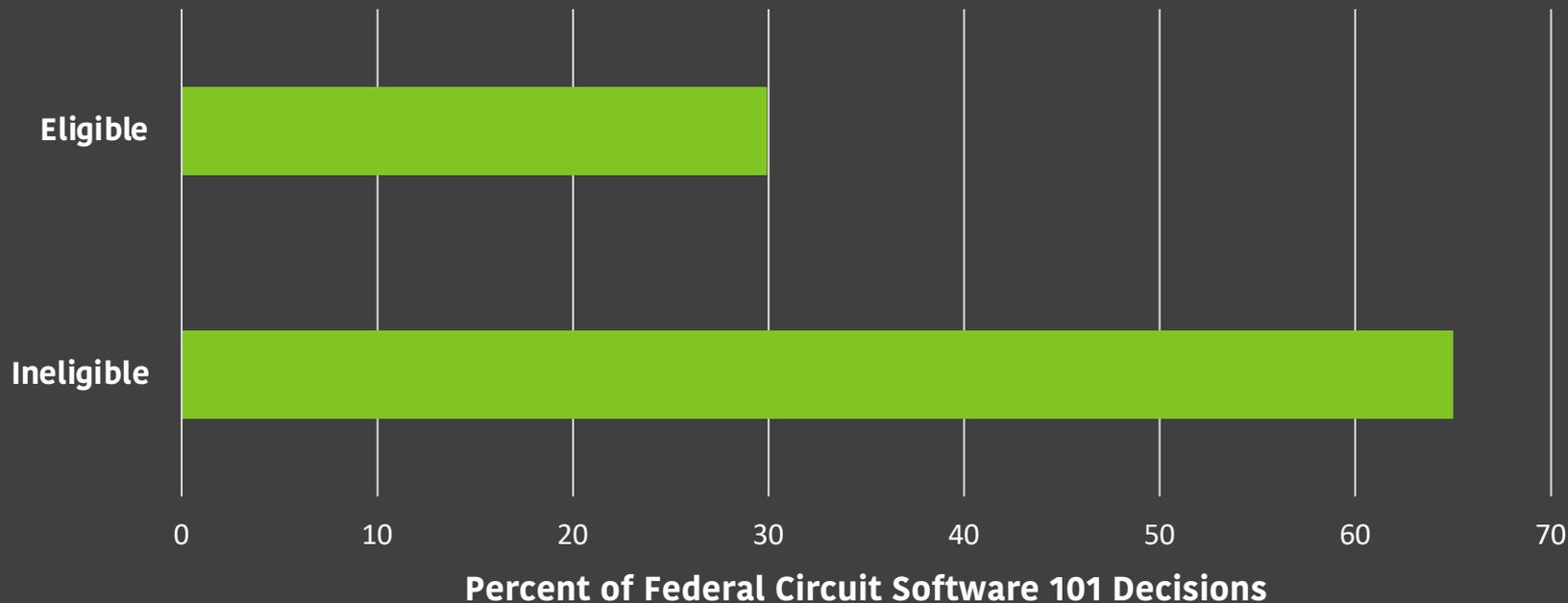




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Federal Circuit Software Decisions 2014-2020



Why Startups File Patents

- Stimulate investment or acquisition
- Deter patent infringement lawsuit
- Carve out contribution to partnership

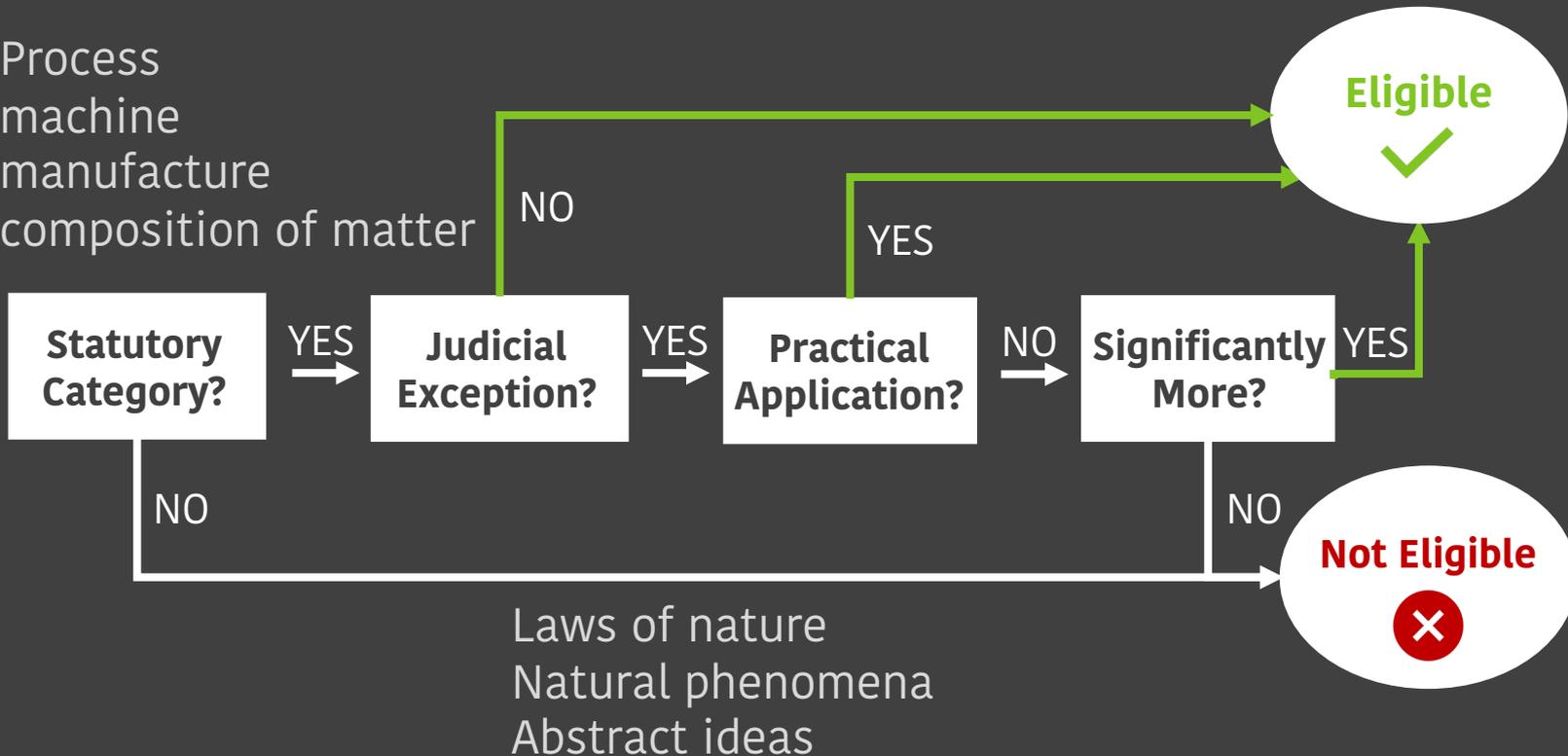
The Problem

- Four categories: process, machine, manufacture, composition of matter
- **However...** the courts have long held that there are implicit exceptions:
 - Laws of nature
 - Natural phenomena
 - Abstract ideas



Subject Matter Eligibility Guidance

Process
machine
manufacture
composition of matter



What **NOT** to do when claiming Software

- Don't recite the automation of previously manual processes
 - **Instead:** claim, with specificity, what the software does
- Don't claim just the intended goal
 - **Instead:** Claim the process through which the goal is achieved
- Don't claim it in such a way that it could be performed in the mind
 - **Instead:** Claim technical solution for technical problem

Ineligible: *buySAFE v. Google* (Sept. 3, 2014)

1. A method, comprising:

receiving, by at least one computer application program running on a computer of a safe transaction service provider, a request from a **first party** for obtaining a **transaction performance guaranty service** with respect to an **online commercial transaction** following closing of the online commercial transaction;

processing, by at least one computer application program running on the safe transaction service provider computer, the **request by underwriting the first party** in order **to provide the transaction performance guaranty service** to the first party,

wherein the computer of the safe transaction service provider offers, via a computer network, the **transaction performance guaranty service that binds a transaction performance guaranty to the online commercial transaction** involving the first party to guarantee the performance of the first party following closing of the online commercial transaction.

US Patent No. 7,644,019

What **NOT** to do when claiming Software

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- Don't claim it in such a way that it could be performed in the mind
 - **Instead:** Claim technical solution for technical problem

Eligible: *DDR Holdings v. Hotels.com* (Dec. 5, 2014)

1. An e-commerce outsourcing process comprising:

- a) capturing a look and feel description associated with a host website and storing HTML code corresponding to the look and feel description at a second website;
- b) providing the host website with a link for inclusion within a page on the host website for serving to a visitor computer, wherein the provided link correlates the host website with a selected commerce object; and
- c) upon receiving an activation of the provided link from the visitor computer, serving to the visitor computer from the second website page with a look and feel corresponding to the captured look and feel description of the host website associated with the provided link and with content based on the commerce object associated with the provided link;

whereby the visitor receiving the served page at the visitor computer perceives the page as associated with the host website even though it is served from the second website.

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Eligible: *Ancora Techs., Inc. v. HTC America, Inc.* (Nov. 16, 2018)

1. A method of restricting software operation within a license for use with a computer including an erasable, non-volatile memory area of a BIOS of the computer, and a volatile memory area; the method comprising the steps of:

selecting a program residing in the volatile memory,

using an agent to set up a verification structure in the erasable, non-volatile memory of the BIOS, the verification structure accommodating data that includes at least one license record,

verifying the program using at least the verification structure from the erasable non-volatile memory of the BIOS, and

acting on the program according to the verification.

What TO DO when claiming Software

- Claim features that contribute to an identified technological improvement
- Integrate any abstract ideas into practical application(s) of the software
- Recite, with particularity, features of the solution or improvement

Eligible: Technological Improvement

Enfish v. Microsoft (May 12, 2016)

1. A data storage and retrieval system for a computer memory, comprising:
means for configuring said memory according to a logical table, said logical table including:
a plurality of logical rows, each said logical row having an object identification number (OID) to identify each said logical row, each said logical row corresponding to a record of information;
a plurality of logical columns intersecting said plurality of logical rows to define a plurality of logical cells, each said logical column having an OID to identify each said logical column; and wherein
at least one of said logical rows has an OID equal to the OID of a corresponding one of said logical columns, and at least one of said logical rows includes logical column information defining each of said logical columns.

US Patent No. 6,151,604

Eligible: Practical Application

CardioNet, LLC et al. v. InfoBionic, Inc. (April 17, 2020)

1. A device, comprising:

a beat detector to identify a beat-to-beat timing of cardiac activity;

a ventricular beat detector to identify ventricular beats in the cardiac activity;

variability determination logic to determine a variability in the beat-to-beat timing of a collection of beats;

relevance determination logic to identify a relevance of the variability in the beat-to-beat timing to at least one of atrial fibrillation and atrial flutter; and

an event generator to generate an event when the variability in the beat-to-beat timing is identified as relevant to the at least one of atrial fibrillation and atrial flutter in light of the variability in the beat-to-beat timing caused by ventricular beats identified by the ventricular beat detector.

US Patent No. 7,941,207

Eligible: Specificity of Solution

McRO v. Sony (Sept. 13, 2016)

19. An apparatus for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:

a computer system;

computer code in said computer system, said computer code comprising:

a method for obtaining a first set of rules that defines a morph weight set stream as a function of phoneme sequence and times associated with said phoneme sequence;

a method for obtaining a plurality of sub-sequences of timed phonemes corresponding to a desired audio sequence for said three-dimensional characters;

a method for generating an output morph weight set stream by applying said first set of rules to each sub-sequence of said plurality of subsequences of timed phonemes;

a method for applying said output morph weight set stream to an input sequence of animated characters to generate an output sequence of animated characters with lip and facial expression synchronized to said audio sequence.

US Patent No. 6,611,278

Other Requirements for Patentability

- **Novelty:** no one reference discloses all the claimed features
- **Inventive Step:** no one or more reference, explicitly or inherently, discloses all the claimed features
- **Sufficiency:** does the patent disclosure reasonably convey to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date
- **Enablement:** is the invention described in such a way that it allows one skilled in the art to make and use the invention without undue experimentation
- **Best Mode:** patent app sets forth the best mode contemplated by the inventor

For AI/ML Innovations...

Applied AI

Invention only possible b/c of ML

Improve or automate known processes

Main invention is not ML (one way)

Core AI

Training data processing

Training methods

Improved models

Hardware

AI adapted for particular hardware configuration

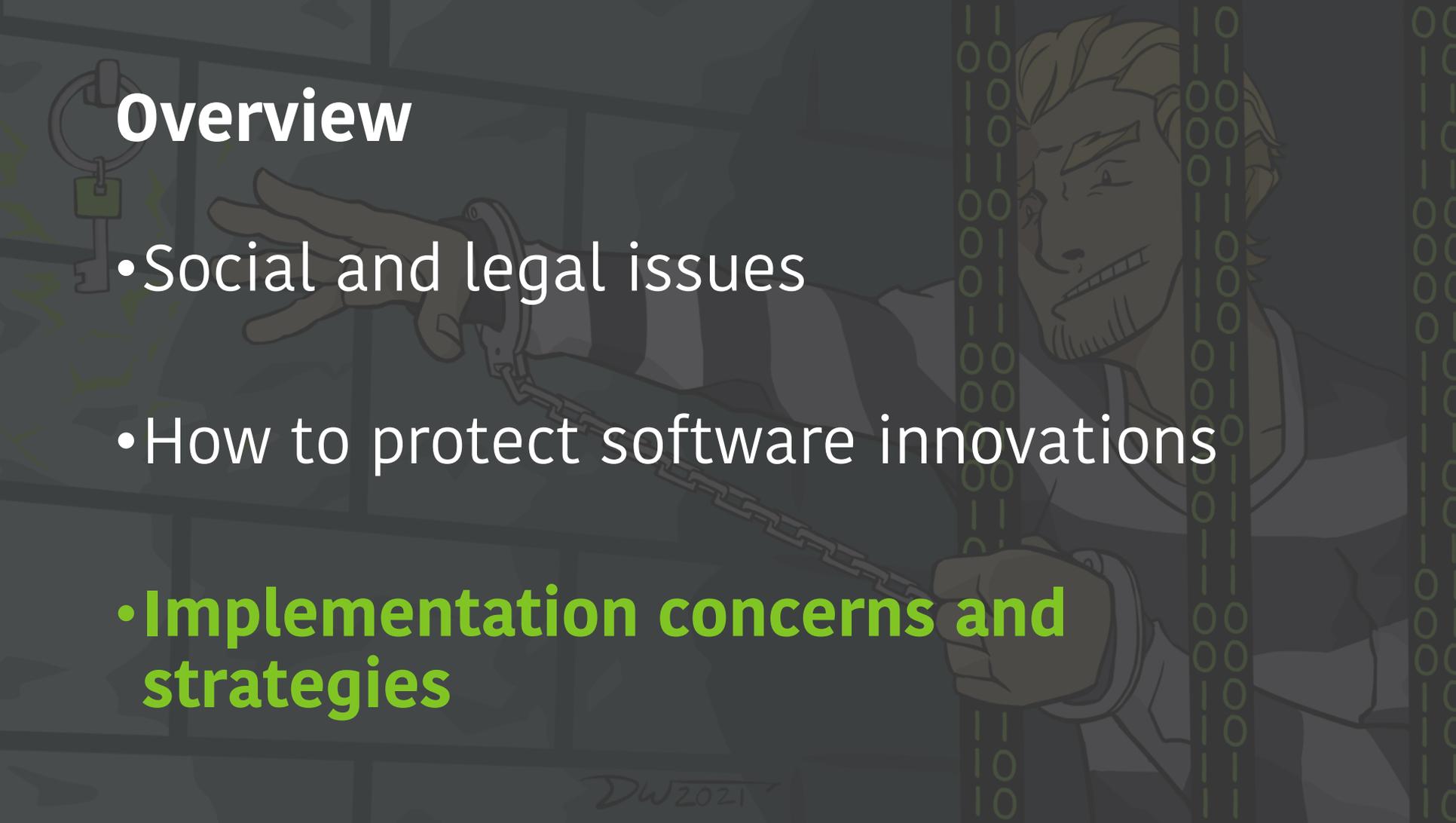
Additional IP Considerations

- **Design patents** for ornamental aspects like animations and GUIs
- **Trademarks** for slogans, brand names, logos, sounds
- **Trade secret** for innovations that are not patent eligible, not ready for patenting, or more valuable as a secret
- **Copyright** for unique software code expressions

Software Patents **vs.** Code Copyrights

- **Copyrights** protect the expression (source code) of an idea and guard against exact replication.
- **Patents** protect the idea and functionality implemented by the source code.





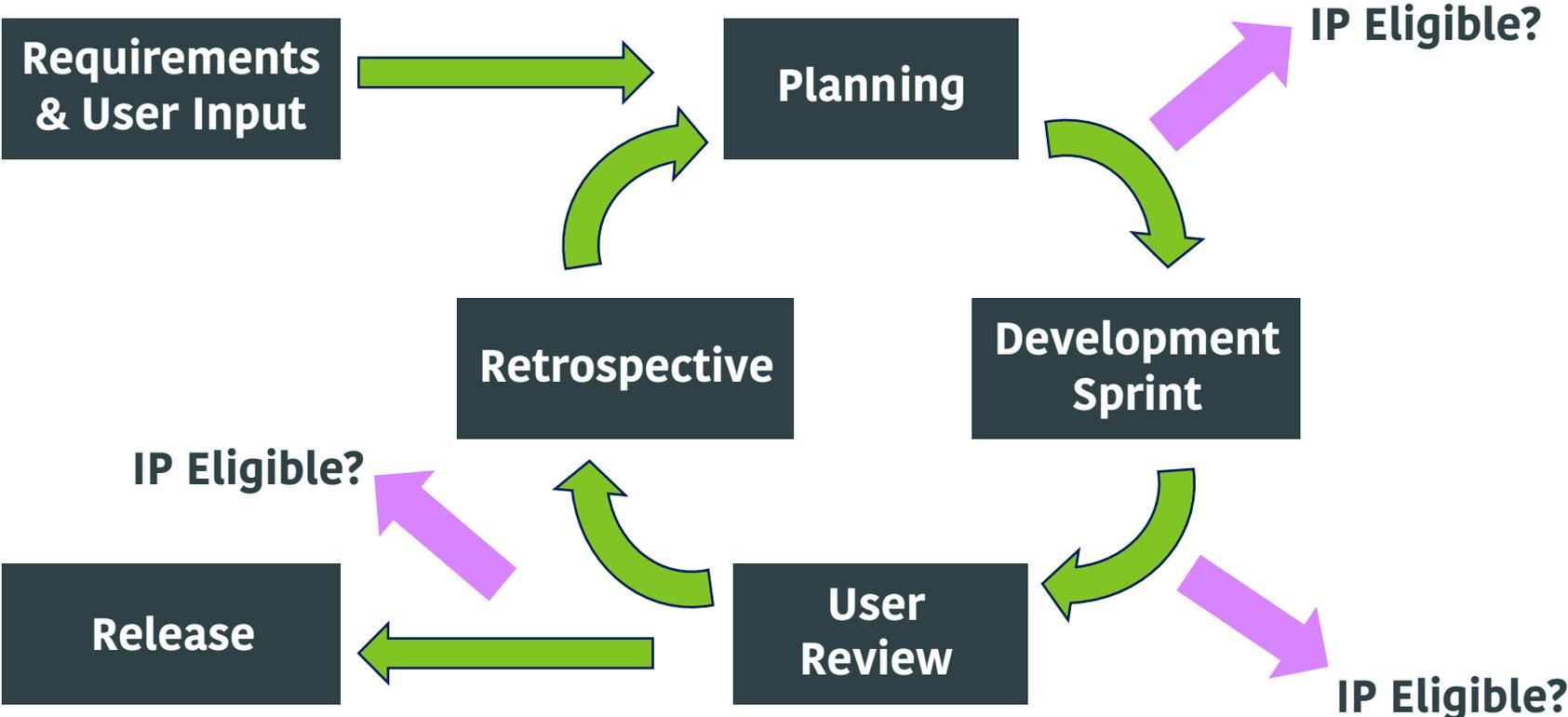
Overview

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- How to protect software innovations
- **Implementation concerns and strategies**

Agile: Constant State of Evolution

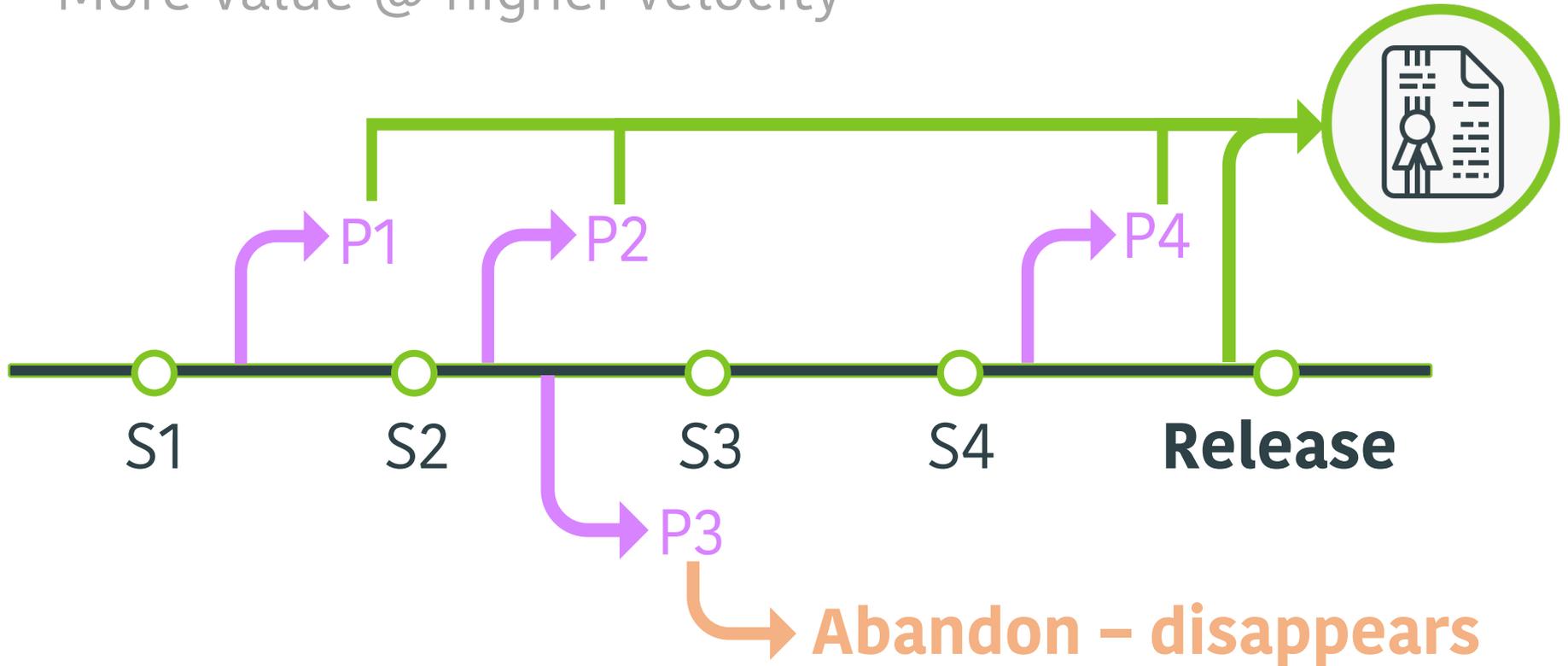
- Fast-paced work cycles
- Rapidly evolving objectives
- Stringent resource prioritization
- Incremental completion
- Early disclosure and customer feedback
- Self-censorship

Agile Software Patenting



Matching Agile's Rhythm: **Filing**

More value @ higher velocity



Third-Party NDAs w/ Feedback Clauses

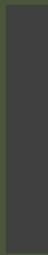
Notwithstanding any other provision in this Agreement, if Customer provides any ideas, suggestions, or recommendations regarding the Product (“Feedback”), Company is free to use and incorporate such Feedback in its products, without payment of royalties or other consideration to Customer, so long as Company does not infringe any of Customer’s IP rights in the Feedback which existed prior to the time of providing such Feedback.

Open-source Considerations

```
if (usingOpenSource) {  
    proceedWithCaution();  
}
```

Open-source: Copyrights w/ Consequences

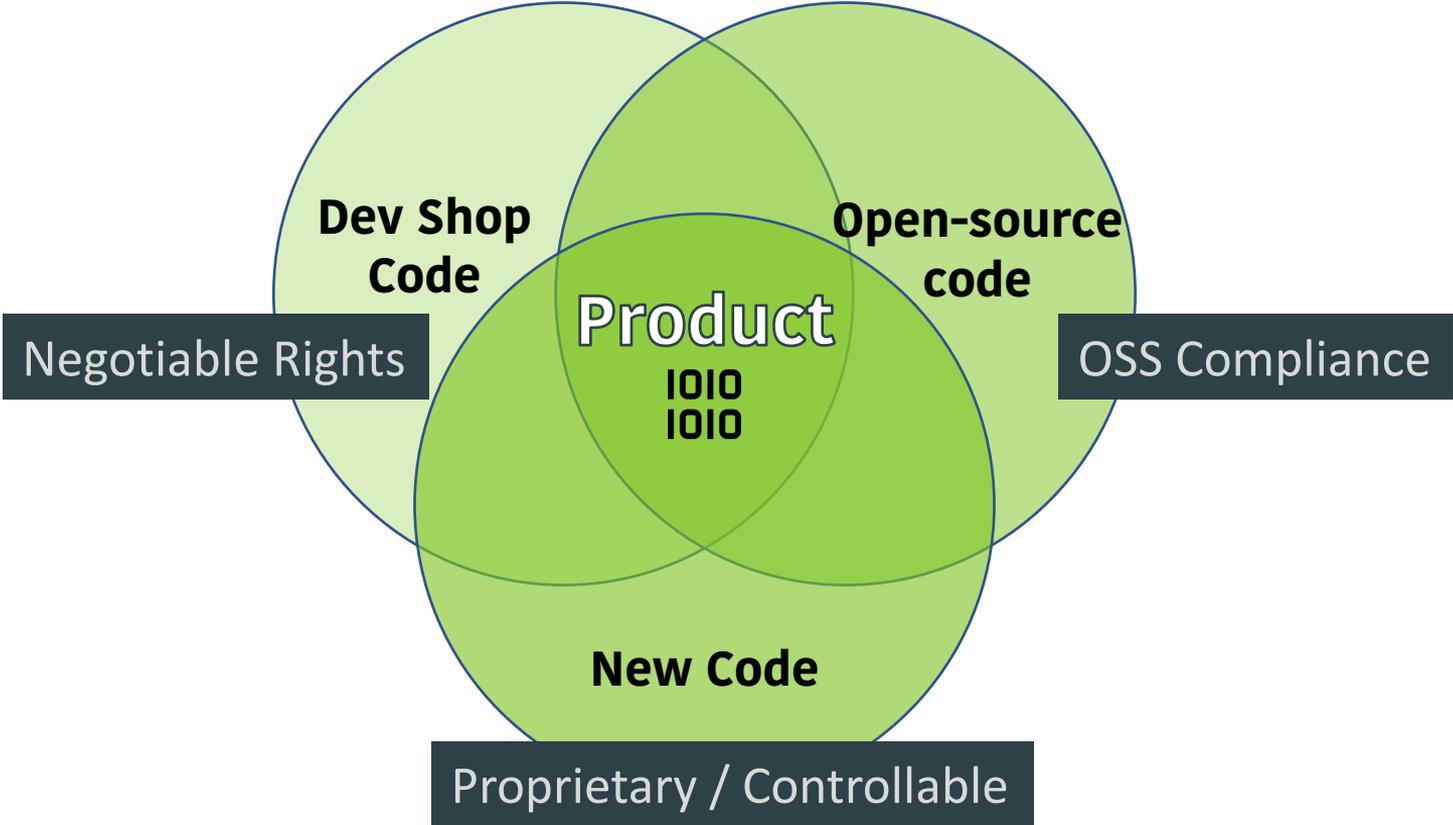
- **OSS Licenses.** Royalty-free, copyright licenses granting 3rd parties the rights to copy, modify and distribute computer code ... **with strings attached.**
- **Copyleft.** Viral type of OSS license requiring derivative works to distribute using the same terms (example: GPL), making your software open-source and eliminating proprietary rights.



Open-source and Patents

- **OSS can be and is patented** for offensive, defensive, altruistic, and commercial reasons.
- **Express/implied license grants** extend a license from the original developer of the OSS to licensees.
- **Patent retaliation clauses** impose penalties (license termination) if you attempt to assert infringement claims related to use of the OSS.

Outsourcing and Code Ownership

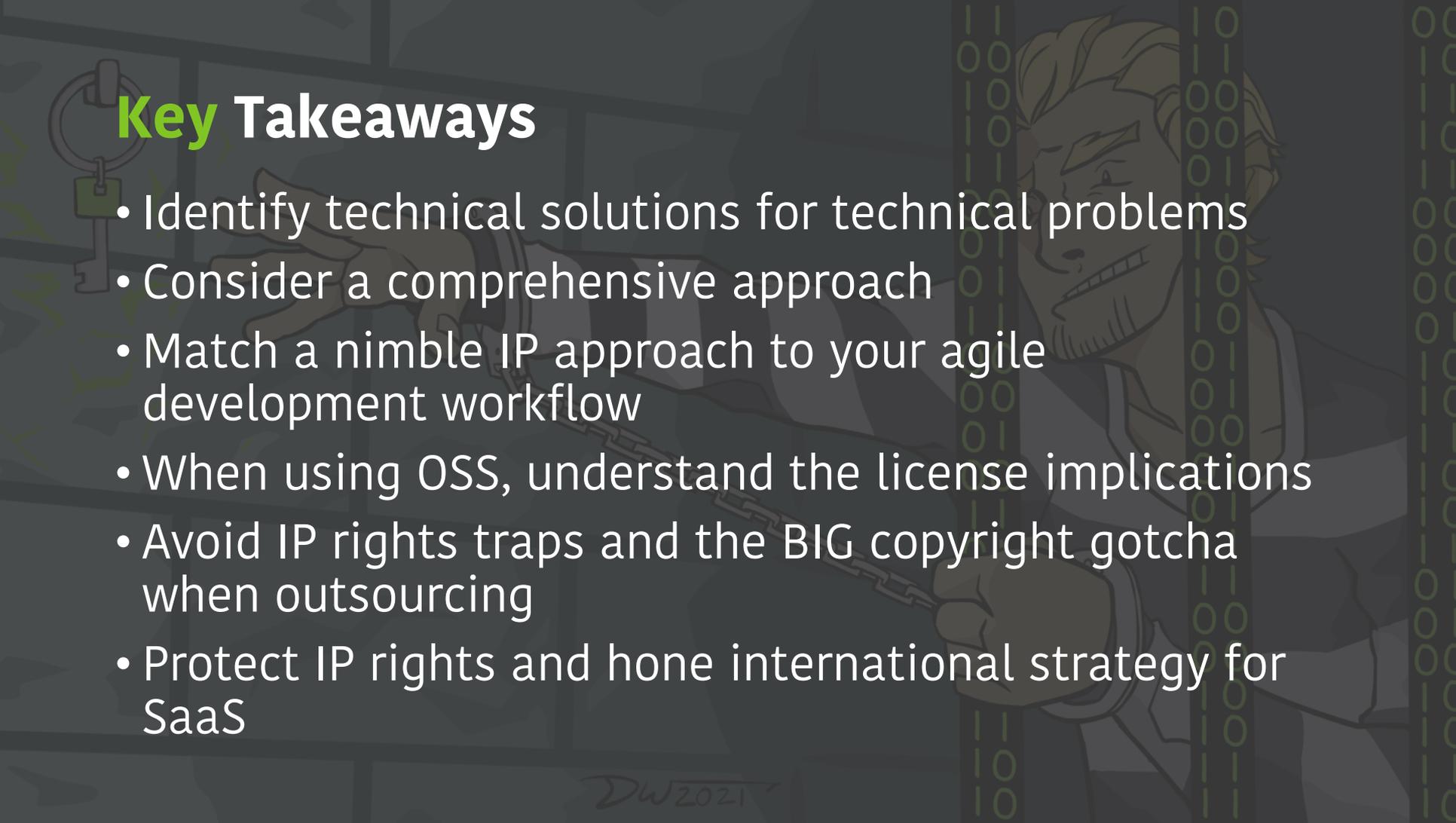


Outsourcing and Code **Ownership**

- Ensure confidentiality via NDA
- Avoid IP rights traps and the BIG copyright gotcha via Software Development Agreement
- Keep code for patentable inventions out of public repositories
- Remember the OSS license implications apply to code adopted by the contractor, as well

Protecting your SaaS

- **Value.** Patents play an even greater role as assets.
- **Rights transfer.** Important to protect IP rights in SaaS agreements.
- **Jurisdictional scope.** Cloud products can be distributed, while patent rights are territorial.
- **Extra OSS flexibility** via network access.



Key Takeaways

- Identify technical solutions for technical problems
- Consider a comprehensive approach
- Match a nimble IP approach to your agile development workflow
- When using OSS, understand the license implications
- Avoid IP rights traps and the BIG copyright gotcha when outsourcing
- Protect IP rights and hone international strategy for SaaS



**Questions or Comments?
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