

Building a Successful Layered Product Strategy for Open Source Platforms Using Software Licensing

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SGI (Silicon Graphics)

- Delivering computing systems to technical and scientific customers for 20 years.
- Usually known for our high end graphics workstations
- For the last 8 years SGI has also provided high end computing - supercomputers
- For the last 4 years SGI has also provided Workflow storage systems - SGI® InfiniteStorage.
- I have been with SGI for 11 years.

SGI & Software Products

- SGI supplies the “computing and data platform”, which requires software products to be useful.
- Examples
 - Film production, Universities, Gov’t labs - write their own software
 - Automotive, Aerospace, Oil & Gas, Chemical - run industry specific software packages.
- SGI is not like a PC vendor

SGI & Software Products

- Therefore, We Really Have Two Customer Sets
 - End Customers - using packages, and writing new software.
 - ISV Companies qualifying their products on SGI® systems.
- Quite different needs and concerns, linked by the economics of software.

Software Licensing

- In this product environment, let's see why software licensing has always been so important.
- Then I will show how we are carrying it into the Open Source environment.

SGI Product History

- Industry specific expertise is of high value, and the software is of high value.
- ISVs often use a pricing model involving value pricing or price based on a % of total system cost.
- In either case, SGI tends to interact with ISVs with big ticket products.
- Our ISV partners' ability to successfully deploy at customer sites involves critical licensing functions.
- The revenue stream involved needs the best protection against any deployment abuse or use outside of licensed provisions.

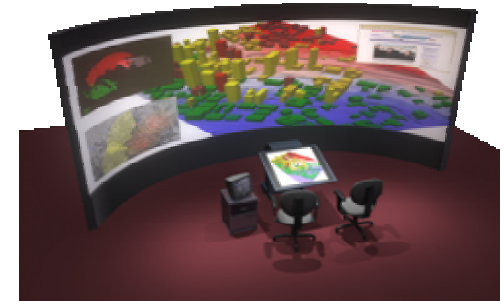
SGI Product History

- SGI is well known for our IRIX® and MIPS® high end graphics systems, and our supercomputers.
- These product lines are complimentary.
- Our products are at the core of many vital technologies
- From the interception 20 years ago, we recognized the need for secure software licensing methods.

SGI Product History

Scalable servers and superclusters

- SGI® Origin® family
- SGI® Altix™ 3000 family



Scalable real time

- InfiniteReality®
- InfinitePerformance™

Collaboration

- SGI® Reality Center®
- Visual Area Networking

SGI Licensing Solution History

- Early adoption of FLEXIm[®], in 1997, with the release of IRIX[®] 5.3 (a version of UNIX[®])
- We added a library such that ISVs could easily utilize the early FLEXIm
- Influencing early direction...

SGI Licensing Solution History

- System serial numbers
 - From the beginning, we have provided secure, unique serial numbers in our systems, baked in at the time of manufacture.
 - Serial numbers are preserved during service actions.
- Important technology - gets careful scrutiny - Challenge®, Origin® 2000, Origin® 3000

SGI Licensing Solution History

- Multi-CPU methods
 - software can run either many copies or instances, or a single multi-cpu job
- Partitioned systems
 - a single computing system can be divided for reliability

That was then ...

- now turn to the challenges of today's environment, dealing with
- business efficiency
- return on your software development dollar
- open source software
- delivering customer value

Linux® & Open Source Business Options

- Fast forward to two years ago.
- SGI's platform was too isolating
- SGI saw the growth of open source in general, and Linux in particular.
- We decided to offer a new line of computing platforms based on Intel® Itanium® and Linux.
- We would position this product initially for compute intensive markets, as a supercomputer.
- This business could not be developed without our ISV partners.

Industry specific expertise would be a core value

- it could be done if ISVs could believe it possible...

Open Source Business Inhibitors

- First looks at Linux® often caution about the uncontrolled nature of Open Source and the danger of the GPL license.
- How can business be built on “shifting sands” of world wide developers?
- Large numbers of projects running independently

Open Source Business: Building a Base

- The basic platform is stabilizing around volume distributors.
- The distributor runs a periodic release cycle, pulling together the work of world-wide developers, qualifying, and version stamping the result.
- This creates jumping off points for ISV's to base their product.
- Examples: RedHat, SuSE, ...

Open Source Business: Role of the Distributor

- Relating the distributor to other entities
 - like the supplier of UNIX®, as AT&T was in the past
 - like the supplier of PC operating systems
- Need to classify distributor offerings in terms of bleeding edge and stability
 - the latest is not always the best for a business situation
 - understanding terminology

Open Source Business: Building a Base

- SGI selected a first, then second distributor on which to qualify and ship our Altix™ product.
 - Considering feature specialization, worldwide markets addressed
 - We utilize RedHat® work and SuSE work
- ISVs are likely to want the “common platform” aspect of a major distributor, to maximize volume and reduce porting costs.
- SGI did not want to reproduce IRIX® isolation.

Open Source Business: The GPL License

- Not many ISVs are giving away software.
- Vendors fear the “viral contamination” nature of GPL.
- GPL encourages adaptation and reuse
- GPL does not allow code to be converted to other licenses
- Typical business licensing and revenue models don't apply to GPL

Open Source Business: The GPL License

- Business and GPL can co-exist.
- Linux® libraries are typically licensed under LGPL, which enables applications to link with them and release under a vendor license.
- Today, many packages have cleared the legal concerns.

Open Source Business: How About Revenue?

- Now the ISV can focus on business.
 - Volume
 - licensing
 - pricing

Open Source Business - Linux® Volume & Pricing

- Volume growth
- Linux is about \$500 desktop machines, where is the revenue?

Linux® Business Potential: There is an Upside

- SGI fast forward to 1 year ago.
- Volume is chicken and egg problem.
- Critical mass has to build.
- SGI would put a stake in the ground for system price points, capabilities and support to partners.
- And what could we do about software licensing?

Linux® Business Potential: SGI Stake

- SGI defined the Altix™ system
- Price points around the Itanium® processor, with SGI value pricing
- Capabilities of high end, but small supercomputers: entry level to \$1M
- Support model like historic IRIX®
- Linux environment - application compatible with desktop systems
- An answer to licensing...

Linux® Business Potential: SGI Stake

- SGI initial positioning, with a high end compute offering, meant ISVs could provide to customers a similar “expertise environment”
- with similar value pricing
- with similar support
- and be leveraging the open source environment
- and limitations of the IRIX® environment are addressed.

Linux® Business Potential: Licensing

- To pitch our open source based product to ISVs, we needed to complete the picture with a licensing solution.
- The obvious answer was to carry forward our familiar FLEXIm® model

SGI Linux™ Licensing Infrastructure

- SGI chose FLEXIm® as the path to enlightenment.
 - Same FLEXIm APIs - for ease of ISV porting code
 - Keep SGI library of enhancements

SGI Linux™ & FLEXIm®

- Packaging, Developer kit, vs IRIX®.
 - SGI ships a) runtime for ISV usage, and b) developer library
 - ISV links with our developer library, if they wish, and ships their application, their FLEXIm “vendor daemon”, and supplies their customer with license keys.
 - Our joint end customer sees the familiar FLEXIm administration environment.

SGI Progress: Fast Forward to Today

- SGI is pleased with ~52 partner ISVs with released product, with many using FLEXIm®.
- SGI is pleased with ~34 partner ISVs to be added in the next 6 months, with further use of FLEXIm.
- We have a sound licensing model, being accepted by critical partners.
 - The safety of FLEXIm was important in getting partners to risk the open source paradigm.

SGI Progress

- Name some partners releasing FLEXIm® licensed aps on IRIX® and Linux®:
 - (Third Party Vendors/Application)
 - Ansys, Inc. - Ansys®
 - Abaqus, Inc. - Abaqus®
 - Livermore Software Technology Corporation - LS-Dyna
 - CD/Adapco - Star-CD™
 - MSC.Software Corporation - MSC.Nastran™
 - MSC. Software Corporation - MSC.Marc™
 - Ricardo Software - Vectis
 - Schlumberger Technology Corporation - Eclipse®
 - Gaussian, Inc. - Gaussian®
 - Accelrys, Inc. - DMol3
 - Accelrys, Inc. - CASTEP
 - EXA Corporation - Powerflow®
 - Fluent, Inc. - Fluent™

Riding Open Source to Volume and Revenue

- Strong licensing on Linux®
 - Creates confidence with customers of a professional delivery.
 - Demonstrates a business approach to ISVs to get the job done.
 - Provides assurance of revenue flow.
- SGI is just getting started.
- Altix™ is a strong product for us.
- Altix provides a focal point to the Linux Community.
- We are very happy with our FLEXIm® decision.

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