OVERVIEW

• U.S. Supreme Court is revisiting the patentability of computer-implemented innovations in *Alice v. CLS Bank*

• Why does software present difficult patentable subject matter issues?

• What is the SCT likely to do in *Alice*?

• What effect will the SCT’s decision in *Alice* have on the SW industry?
PATENTABILITY

• To be eligible for a patent, an inventor must submit an application to the patent office, which will be examined for:
  – Eligible subject matter (SM)
    • Machine, manufacture, composition of matter, & processes named in the statute
    • All processes? Or only technological ones?
  – New, nonobvious, & useful
  – Adequate claims, proper disclosures
• Issued patent presumed valid, good up to 20 yrs
SW PATENT CLAIMS

• Sometimes claimed as a process (a “method” of doing X, consisting of steps…)
• Sometimes claimed as a machine (a “system” for performing specified functions in specified way)
• Sometimes claimed as a “manufacture” (program stored on a computer medium)
• Alice’s patents include all 3 types of claims and all contemplate software-implementations
ALICE v. CLS BANK

- Alice has patents that claim a software-implemented way to manage settlement risks for financial transactions
  - Money won’t change hands until both parties have completed their obligations
- CLS Bank developed a complex program to perform these functions on a global basis
- Alice asserted CLS Bank infringed its patents
- CLS sought a declaration that the patents were invalid under recent SCT decisions; Alice counterclaimed
- DCT ruled for CLS; Alice appealed
- CAFC deeply split on the appeal
CAFC DECISION

• CAFC heard *Alice* en banc (all 10 judges)
  – 5 judges voted to strike down all 3 types of claims
  – 2 judges agreed that the method and medium claims were invalid, but for different reasons than the other 5
  – 5 judges voted to uphold the system claims
  – 3 judges would have upheld all claims
  – 7 opinions altogether (150 pages long)

• Upshot: Split vote on the system claims results in affirmance of DCT decision to strike all down

• No agreement in CAFC re standard to apply
STATUS OF CASE IN SCT

- Deep split within the CAFC made it almost inevitable that the SCT would take *Alice*
- Parties’ briefs + amicus briefs supporting Alice filed in Jan.
- CLS-side amici briefs filed in Feb.
- SCT heard oral argument in *Alice v. CLS Bank* on March 31
- SCT will decide by end of June
- Unlikely SCT will answer all SW patent SM?s with this case, but perhaps some
50 YEAR CONTROVERSY

• 1960s-mid-1990s: skepticism about patent protection for SW

• Mid-1990s-2006: tide shifted in favor of software patents (even though mixed views within the industry)
  – many developers took advantage of the opportunity to get patents

• 2006-now: tide shifted again toward doubts about patents for software innovations
MID-1960’s VIEWPOINTS

• PTO doubted patentability of SW:
  – SW=texts; “printed matter” ineligible for patents
  – Processes embedded in SW were often “mental processes,” capable of being done in the mind
• 1966 Presidential Commission recommended vs. SW patents, saying copyright would adequately protect them
  – even though Cop. Office then not sure SW was ©’ble
• IBM, Honeywell, other computer makers were vs. SW patents back then
  – Impediments to SW that could run on their machines
GOTTSCHALK v. BENSON (1972)

• Benson (Bell Labs ee) developed a method for transforming binary coded decimals to pure binary form
  – 1 claim was for the method in general terms
  – 1 claim mentioned hardware elements (re-entrant shift registers)
• SCT: not patentable SM (9-0 vote)
  – Mathematical algorithm = scientific principle
  – Claim would preempt all uses of algorithm in all fields
  – Did not transform matter from 1 form to another
  – Computer-implementation claim not distinguishable
PARKER v. FLOOK (1978)

• Flook claimed an improved method for updating alarm limits for catalytic converter process

• Novel & nonobvious algorithm
  – Field of use limitation in claims (only use of that algorithm in catalytic conversion process)
  – Some post-solution activity (adjusting alarm limits so plant wouldn’t blow up)

• SCT: not patentable SM (6-3)
  – Field of use, insignificant post-solution activity not meaningful limits; worry about artful claim drafting
DIAMOND v. DIEHR (1981)

• Diehr claimed patent for improved method for curing rubber, which included SW as component
  – SCT affirmed patentability (5-4) because claim was for a traditional manufacturing process
  – Dicta: everything under the sun made by humans OK

• Initially seemed like a narrow decision
  – Only when SW was part of a conventional mfg process
  – PTO treated it so, denied many SW applications
FEDERAL CIRCUIT

• CAFC took an increasingly an expansive view of patentable SM, especially as to SW, in 1980s & 1990s
  – Freeman-Walter-Abele test in 1980’s: if claim does not wholly preempt use of algorithm, then it recites patentable SM
  – Alappat decision in 1994 involved a software system for smoothing waves in oscilloscopes:
    • Questioned whether Benson limited system claims
    • “Useful, concrete, tangible result” test for SM
STATE STREET BANK (1998)

• Signature Financial had gotten a patent on a data processing system for particular financial structure having certain tax advantages

• SF sued SSB; DCt ruled patent was invalid under SCT precedents & earlier cases holding business methods to be unpatentable

• CAFC: business methods ARE patentable SM
  – Indeed, everything under the sun made by humans = patentable SM as long as it produces “useful, concrete & tangible result”
FLOODGATES OPENED

- Tax planning methods
- Jury selection methods
- Dating methods
- Meditation methods
- Method for teaching experiential writing
- Method for assessing person’s character
- Process of relaying story having unique plot
- Under State Street Bank, all seemingly pass SM threshold (even though no link to technology)
  - Though claims might be rejected for lack of novelty, obviousness or overbreadth
UPTICK IN SW PATENTS

• Partly because patent lawyers were strongly recommended getting patents, if only for defensive purposes
• Partly due to desire by some to have some to ensure freedom to operate
• Partly owing to VC interests in patents as some assurance that firm might attain competitive advantage (or asset if co went bankrupt)
• Partly because © was “thin” after CA v Altaï
SCT INTEREST SINCE 2006

• SCT took appeal in LabCorp. v. Metabolite on SM issue
  – M claimed LC induced infringement by reporting to doctors levels of homocysteine in blood sample, which doctors could correlate with vitamin deficiency, thereby infringing the patent
  – SM issue not cleanly presented below, so SCT dropped case
  – Justice Breyer wrote dissent saying patent was for discovery of natural phenomenon; invalid on SM grounds
• Microsoft v. AT&T: 5 Justices asked whether software was patentable (even though issue not in the case)
• eBay v. MercExchange: Kennedy concurrence for 4 Justices called into ? business method patents
  – Overturned CAFC automatic injunction rule if patent infringed
  – Damages may be sufficient as equitable matter
PTO RENEWS SM REJECTIONS

• In response to SCT signals, PTO began rejecting claims on patent SM grounds:
  – *Bilski*: method for managing risks of energy consumption based on weather uncertainties
  – *Borton*: method for business projections
  – *Ferguson*: method for marketing a product
  – *Barnett*: method of coupon distribution via Internet
  – *George*: method for planning activity levels after rapid time zone changes; chart depicting
IN RE BILSKI

• Bilski sought a patent on a method of hedging risk in fluctuation of commodity prices
• PTO rejected on SM grounds, Bilski appealed
• Under SSB, no reason to doubt that Bilski’s claim would satisfy SM standards
• On appeal, CAFC articulated new SM test:
  – Did inventor claim a machine?
  – Did inventor claim a transformation from 1 state to another?
  – Bilski did not meet either, so CAFC upheld denial
DIVERGENT VIEWS ON SM

• Everything under the sun is patentable SM

• Only traditional manufacturing processes are patentable; no evidence Congress intended o/w

• Constitution limits Congress’ power to those processes in “useful arts” (= technology)

• Need for some physical transformation or technical effect to be patentable SM, but SW OK

• Need for broad conception as to technological processes (e.g., applied economics OK)
REASONS NOT TO LIMIT

• “Technology” is incapable of precise definition, so not worth trying to weed out on SM grounds
• Don’t limit patents to yesterday’s technologies (i.e., manufacturing); risk of harming today’s most significant advances
  – New technologies may not be “transformative” in physical way, as previous advances generally were
• Many advances embodied in SW, biotech are often expensive to develop, cheap to imitate; need patent investment incentives
• Trying to limit patent SM will lead only to “artful drafting” to bypass it
BILSKI v KAPPOS

- SCT took Bilski’s appeal
- Clear from oral argument Bilski was going to lose; only ? was on what rationale
- Like the CAFC, the SCT was not all of one mind
- Ultimately held Bilski’s claims were too abstract to be patent SM
  - Stevens concurrence for 4 Justices: business methods are unpatentable
- Revived Benson & Flook as important precedents, characterizing them as too abstract
WHAT’S “ABSTRACT IDEA”? 

- Alice: only mathematical formula & fundamental truths
  - My patent claims are not either, so uphold them
- CLS: Alice’s claims are like Bilski’s (methods of hedging financial risks)
  - Claiming computer-implementation alone is insufficient
  - Patent would preempts all uses of that hedging method/system/medium
  - This is NOT a sw patent case (so don’t get distracted)
AMICI BRIEFS

• 3 in support of Alice
• 20 in support of neither party
  • IBM: computer-implemented inventions are patent-eligible; abstract idea exception unworkable
  • Some bar assns & Judge Michel: consider claim-as-a-whole; narrow construction of abstract idea
  • Retailers: computer-implementation not enough
• 18 in support of CLS Bank
  • Google, Amazon, Facebook, Zynga et al.
  • Microsoft, BSA, CCIA, PK, EFF
WHAT WILL THE SCT DO?

• Despite FSF objections to “sw patents,” unlikely SCT will outlaw them all
• *Diehr*-like claims for programs as elements of traditional manufacturing process are safe
• Claims for methods that achieve technical effects will probably be patentable SM
  – *Abele* would pass this test as better x-ray system
  – *State Street Bank* would probably flunk this test because result of this process was generation of share price #s
OTHER POSSIBILITIES

• Software, as such, is probably not patentable SM, even though *In re Beauregard* said object code on disk = patent SM
  – PTO, SCT likely to say program code is ©’ble, not patentable, SM
• *Benson/Flook*-like claims: where innovation lies in algorithm/mathematical concepts, not patentable SM
• Other information innovations embodied in sw (e.g., data structures, UI designs) may not be patentable SM as too abstract
EASY ISSUES

• Not enough to claim field of use restriction
• Not enough to claim insignificant pre- or post-solution activity
  – How to measure “insignificance”? 
• Computer implementation of X function may be too abstract to qualify for patenting
  – Bessen & Meurer, Patent Failure discusses this 
• Not patentable if preempts use of algorithm, as in Benson
  – SG insists that M-or-T is distinct inquiry from preemption inquiry; CAFC blurred the two 
  – Even preemtping within a field is a problem
METHOD cf SYSTEM CLAIMS?

• Method or apparatus claims?
  – 5 CAFC judges think that apparatus claims for programmed computer to do X might satisfy SM requirements
  – SCT unlikely to find this acceptable, as it would be too easy to circumvent intent of SM ruling
    • Stevens, Breyer, and Roberts seemed very dissatisfied with SG’s argument on this issue in *Bilski* case
  – If buy that theory, does computer become new machine each time it plays a different CD of music?
    • Would digital music be patent SM as *Beauregard* claim?
HARDER ISSUES

• What transformations will qualify?
  – *Diehr* was easy case because method transformed rubber & computer implementation arguably overcame under-, over-curing problem
  – What about data?
    • *Benson* involved transformation of data
    • Method to transform MP3 data to WAV?
    • Method of calculating mean item in group of items?
    • Method of presenting information (e.g., HTML)?
HARDER ISSUES

• What does it mean to be tied to a particular machine?
  – SW may be component of x-ray or other particular machines, in which case claims likely to be OK
  – But merely being tied to a general purpose computer may not satisfy patent SM
    • Fuzzysharp: DCT granted SJ to D where claims only mentioned components of general purpose computer
  – Any middle ground?

• Does M-or-T provide the right framework?
  – Best argument in Fuzzysharp is that method is more efficient way to assess visibility of 3-D surfaces for graphics displays (reduces # of calculations)
ORAL ARGUMENT IN ALICE

• Most of the Justices were plainly skeptical of Alice’s patents

• Justice Roberts was impressed, though, at the complexity of a flow chart in the record
  – “a lot of arrows” makes it look “complicated”
  – CLS lawyer said this chart was not at issue

• SG proffered a test for SW patenting:
  – OK if claim an improvement in the computer or if computation improves other technology

• No SW in the case, so SCT could duck the SW issue

• What standard will give clarity & predictability?
WHAT IMPACT FOR SW?

• Alice claims failure to uphold broad patentability of computer-implemented inventions “will decimate entire sectors of the economy and stifle innovation” & some amici agree

• But there are reasons to doubt this:
  – Only a small minority of SW companies own or apply for patents
  – Copyright, TM, trade secrecy & licensing are more significant ways to protect SW
  – First mover advantage, network effects, & complementary assets also highly important
FIXING “BAD” PATENTS?

• Court decisions striking down all or most SW patents is possible, but unlikely
  – PTO working on guidelines to clarify standard
  – Some issued SW patents are likely invalid
• Courts may take a closer look at novelty, nonobviousness, breadth of claims
• New post-grant review regime in PTO may help weed out “bad” SW patents
• Setting higher maintenance fees may deter trolls
• Various bills in Congress
CONCLUSION

• People have been arguing about the patentability of SW for almost 50 years
• No evidence that SW patents have been “good” for the software industry
• But no evidence they have been ruinous either
  – Though patent “trolls” have extracted some rents, they have less leverage after eBay v. MercExchange re injunctions
• Patent portfolios, cross-licensing, & patent pools to protect open source help address SW patent problems
• SCT decision in Alice is unlikely to end the debate over patents for computer-implemented inventions