



# **Financial Information Forum**

## **FIF OSI Post-Mortem Survey Findings**

### **March 31, 2010**

# FIF OSI Post-Mortem Survey Background

- Survey Objective: Evaluate the industry's preparations for tackling OSI from resource planning to implementation strategies and how lessons learned can be applied towards a successful implementation of the IRS mandated Cost Basis project.
- Panel Agenda
  - Resources Spent on OSI
  - Adequacy of OSI Staffing/Testing
  - External Entity Support (OCC, Exchanges, Vendors, FIF)
  - OSI Implementation Process - Pain Points & Successes;
  - Comparison to Cost Basis - Resources Requirements and Similarities/Differences
  - Lessons Learned for Future Initiatives

# FIF OSI Post Mortem Survey

## Estimated and Actual Industry Cost

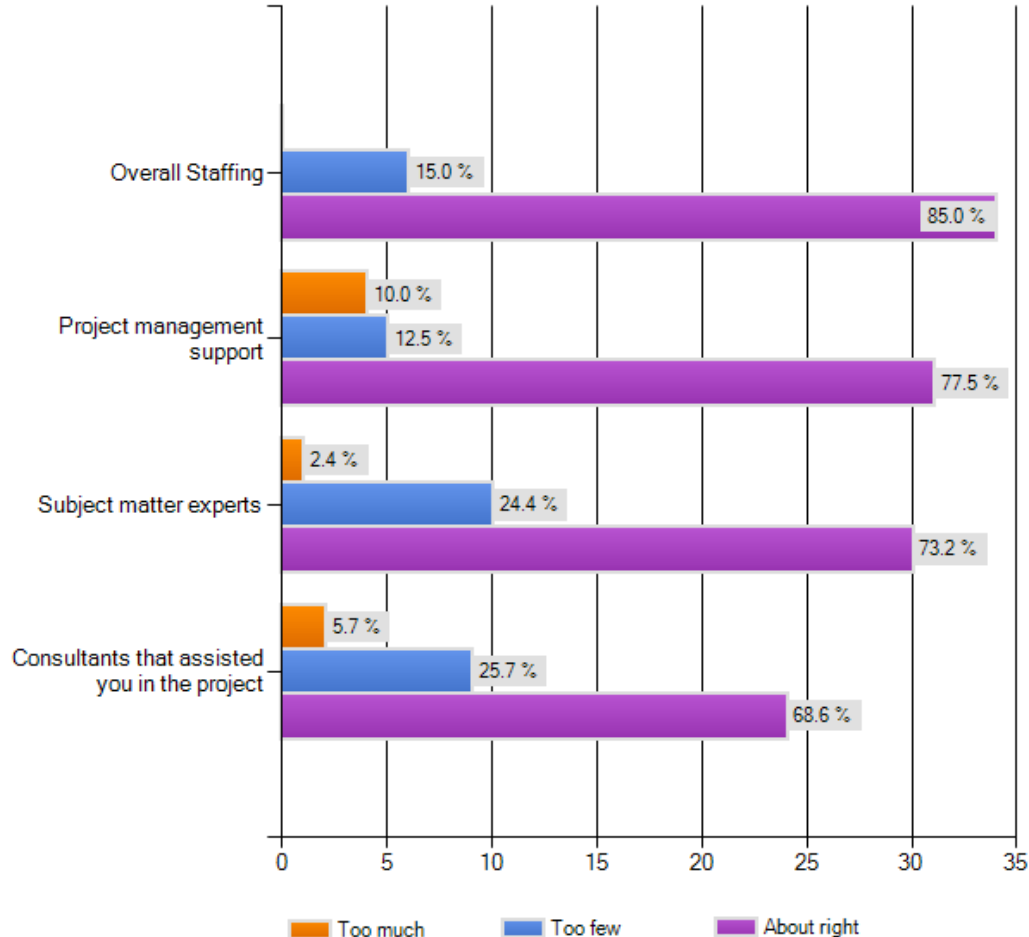


Broker Dealer Categories	Average Man Days - Estimated	Average Man Days - Actual	# of Firms	Estimated Cost Based on \$1,000 Man Day	Actual Cost Based on \$1,000 Man Day
Institutional	3,383	7,560	21	\$ 71,036,000	\$ 158,765,500
Clearing Firms	1,398	2,625	9	\$ 12,580,000	\$ 23,625,000
Full Service	3,509	3,464	14	\$ 49,125,000	\$ 48,500,000
Retail Discount Brokerage	4,458	6,969	6	\$ 26,750,000	\$ 41,812,500
Retail Financial Services	7,000	2,000	6	\$ 42,000,000	\$ 12,000,000
Market Maker	325	750	5	\$ 1,625,000	\$ 3,750,000
OCC /ISE/NYSE Arca Options Members (Not included above)	125	125	157	\$ 19,625,000	\$ 19,625,000
<b>Broker Dealer Subtotal</b>			<b>218</b>	<b>\$ 222,741,000</b>	<b>\$ 319,328,000</b>
Vendors In Survey	Average Man Days - Estimated	Average Man Days - Actual	# of Firms	Estimated Cost Based on \$1,000 Man Day	Actual Cost Based on \$1,000 Man Day
Market Data Vendor	446	2,969	7	\$ 3,125,000	\$ 20,781,000
Service Bureau	1,600	3,656	12	\$ 19,200,000	\$ 43,872,000
<b>Vendor Subtotal</b>			<b>19</b>	<b>\$ 22,325,000</b>	<b>\$ 64,653,000</b>
<b>Industry Total</b>			<b>237</b>	<b>\$ 245,066,000</b>	<b>\$ 372,731,000</b>

Note: Entities not considered in the model include OCC, DTCC, exchanges, buy-side firms, options software providers, internet portals (e.g., Google, Yahoo). No additional market data vendors or service bureaus that did not respond to the survey were added

# FIF OSI Post-Mortem Survey

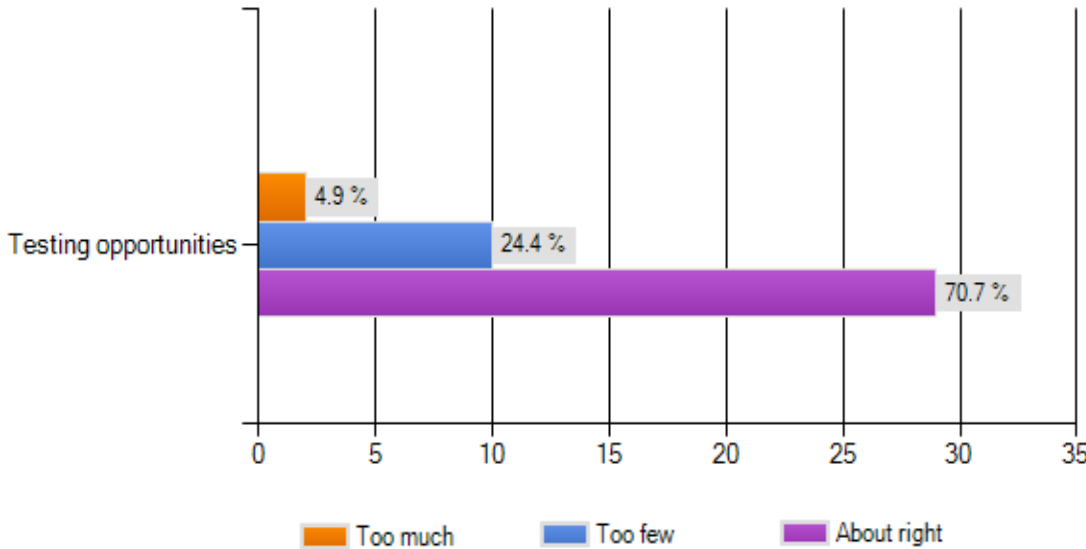
## Adequacy of OSI Staffing



Firm Type	Adequacy of Staffing - Comments:
Broker Dealer	Consultants not experts in the field.
Broker Dealer	From a Project Management and Staffing perspective, our success was contingent to the amount of time available to plan, manage and implement the required changes. OCC and the Exchanges' willingness to work with the Industry B/Ds and give us more time (from the original date) was a major contributing success factor.
Broker Dealer	Small change with wide impact presented a challenge across the distributed environment.
Broker Dealer	Late availability of certain vendor code limited testing opportunities
Market Data Vendor	Going for an early implementation our organization had to deal with very specific issues which weren't yet on the industry's radar.

# FIF OSI Post-Mortem Survey

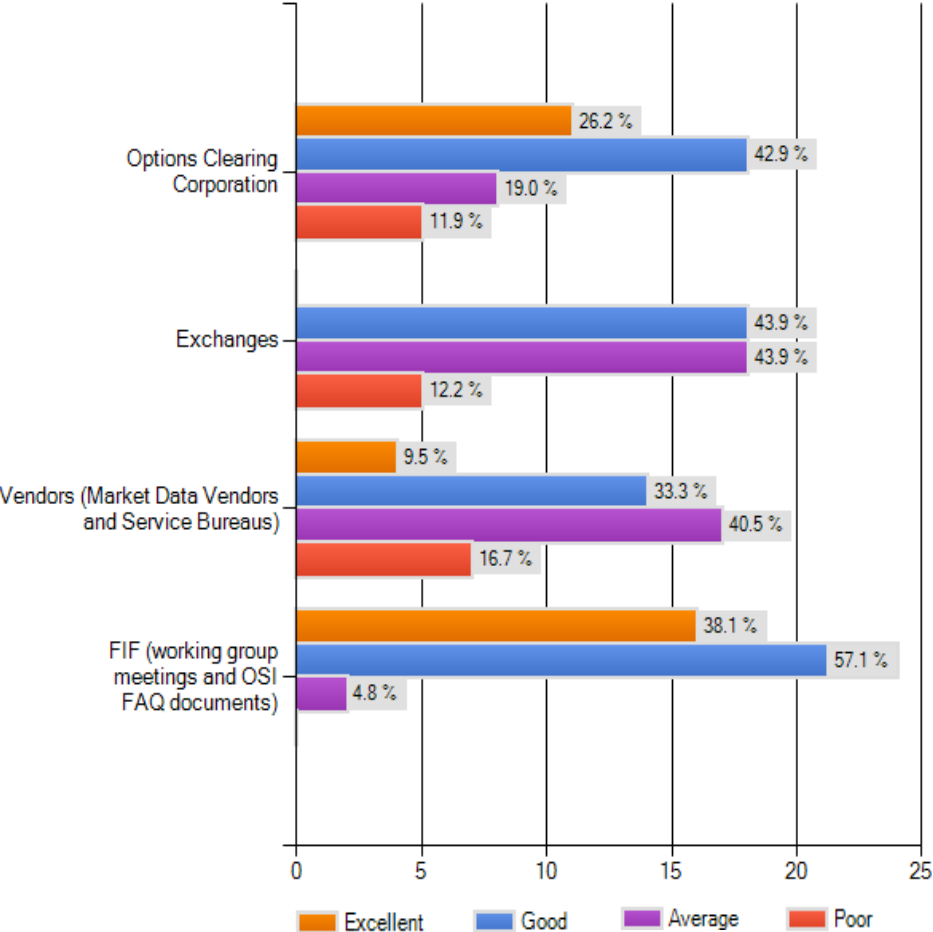
## Adequacy of OSI Testing



Firm Type	Adequacy of Testing - Comments:
Broker Dealer	The OCC facilitated sufficient testing opportunities and the schedule was clearly communicated. However, some service bureaus, market data vendors, smart order routers and exchanges should have provided more testing opportunities and clearer schedules. We spent a lot of effort following up with our partners. In some cases, they were not ready for OSI until much later. Although, everyone finished their work by the industry deadline, some were waiting until the late making our testing efforts difficult
Broker Dealer	Late availability of certain vendor code limited testing opportunities
Service Bureau	Once defined the Program was easy to staff accurately for development and requirements gathering. It would have been better had the need for testing been facilitated with more environments and with more opportunities for industry testing
Service Bureau	Testing efforts overall were appropriate. There did seem to be a lack of preparation and readiness by the exchanges early in the process. This improved over time and as testing continued.

# FIF OSI Post-Mortem Survey

## External Entity Support (OCC, Exchanges, Vendors, FIF)



Firm Type	External Entity Support Comments
Broker Dealer	As an industry, we need to do this better. OCC was ill-equipped to manage the testing efforts because there are too many "front office" things they simply don't understand – e.g. FIX messaging, order entry, GTC order handling. Secondly, the exchanges should be REQUIRED to test all large initiatives in their TEST systems. There were at least three serious incidents caused by the exchanges testing in their PROD systems, and failing to reset things properly before Monday.
Broker Dealer	Karen Glad did an exceptional job steering the testing effort. Data vendors and Service Bureaus overall were obtuse in specs and slow in answering questions.
Market Data Vendor	Mark G. of ISE especially helpful providing perspective and encouraging transparency and collaboration between industry participants. Overall the OCC leadership was very good - they were available when needed- excellent responsiveness - and provided adequate testing and communication opportunities. Sometimes they did not recognize the importance of scenarios outside their area of expertise and were resistant to learning, but it was overcome by the participants.
Service Bureau	<ol style="list-style-type: none"> <li>1) Symbol symmetry and investor confusion starting to grow due to longer ticker length. Exchanges and OCC cannot justify it after efforts whole industry put in.</li> <li>2) Vendors started opting for their own method of presentation and thus variety of symbols across the products and vendors</li> </ol>
Service Bureau	The FIF stood out here in terms of providing a centralized repository of the requirements. OCC was helpful in that they organized the regular meetings.

# FIF OSI Post-Mortem Survey

## OSI Implementation Process: Broker Dealer Pain Points

Firm Type	OSI Pain Points
Broker Dealer	<ol style="list-style-type: none"> <li>1. Lack of industry collaboration on a common customer friendly symbol</li> <li>2. Insistence by OCC that this was an widely supported industry initiative that had broad benefits when the OCC decision makers were the governing board consisting mostly of exchanges, OCC insiders and large institutions while retail firms were under represented. The board makeup did not represent the firms who ended up having to spend money to remediate.</li> </ol>
Broker Dealer	<ol style="list-style-type: none"> <li>1. Firm members asking the same questions on multiple conference calls.</li> <li>2. The use of Testing Trade Date/Activity Date which skipped dates (use dates as Holidays between i.e.11/16 TD, 11/20 SD).</li> <li>3. Time between Test Cycles was not sufficient to complete internal application processing.</li> </ol>
Broker Dealer	<ol style="list-style-type: none"> <li>1. During early stages, not knowing whether this project was really going to happen and having to convince the firm during the financial crisis to commit millions of dollars to the project.</li> <li>2. Unwillingness of the OCC to recommended symbol display standard despite numerous requests. It required a lot of work for individual firms to come up with their own display standards and contributed to inconsistent symbol representation for customers.</li> <li>3. Exchanges could have better co-coordinated to provide a more consistent and consolidated procedures. Firms had to review each exchanges process and make necessary tweaks.</li> </ol>
Broker Dealer	<ol style="list-style-type: none"> <li>1. Lack of transparency and timely information from the Market Data community.</li> <li>2. Lingering Symbology differences between Market Data, Trade &amp; Customer Interface functions               <ol style="list-style-type: none"> <li>a. Expanded OPRA 17 chars vs. OSI 21 chars</li> <li>b. OPRA 5 char root symbol vs. OSI 6 char root symbol</li> <li>c. OSI Display Symbol for Customers is different across the Industry</li> </ol> </li> <li>3. Sheer magnitude of the effort to identify required work as OSI touched almost every major Front End, Middleware and Back End applications.</li> </ol>
Broker Dealer	<ol style="list-style-type: none"> <li>1. Complete lack of standardization.</li> <li>2. Lack of flexibility for firms requesting more time.</li> <li>3. These mandated projects are tremendously expensive and prevent us from utilizing our resources to roll out differentiated customer facing enhancements to our platforms.</li> </ol>
Broker Dealer	<p>Inadequate resolution of issues regarding a parallel with production Did not like the fact we had to phase it in - dragging the full implementation from Feb 12 to May is really not necessary. Could have done the March 12 list on Feb 12 - followed by March 12 for all.</p>

# FIF OSI Post-Mortem Survey

## OSI Implementation Process: Exchange / Vendor Pain Points

Firm Type	OSI Pain Points
Exchange	<ol style="list-style-type: none"> <li>1. Low level of preparedness by some meeting participants</li> <li>2. Absence of representation of affected member entities</li> <li>3. Absence of member consensus on standards and environments</li> </ol>
Market Data Vendor	<ol style="list-style-type: none"> <li>1. I entered the project half-way through, as I was in a different department prior to entering a market data services role.</li> <li>2. Not knowing what approach other vendors were taking - at least not until towards the end of the project.</li> </ol>
Market Data Vendor	<ol style="list-style-type: none"> <li>1. Not having a standard symbol presentation format</li> <li>2. Elongated implementation period</li> </ol>
Service Bureau	<ol style="list-style-type: none"> <li>1) LOPR was definitely a challenge since OCC requirements were so different from that of SIAC. The exceptions were more complex and given the scope of the project, customers did not review the exception reports, so when they went live they we caught off guard.</li> <li>2) OSI symbol- the absence of an industry standard. We hope there will be one for Equity symbology PLEASE!!!</li> <li>3. Cost was a major factor .</li> </ol>
Service Bureau	<ol style="list-style-type: none"> <li>1. LOPR Process was not as well coordinated as the rest of OSI,</li> <li>2. LOPR became much more manual intensive Post live date</li> <li>3. Lack of understanding of the project in the earlier parts of the Project</li> </ol>
Service Bureau	<p>I'd have to say that once things got rolling, there really weren't any frustrations - communication was clear and support was available. However, to answer the question: - dual standards, OPRA and OSI formats; no need to have two symbols - dual efforts, the FIF and OCC sessions largely paralleled each other; I'm not sure that both need to lead - there is not longer a single identifier for options, each vendor has interpreted the standard differently and all interprocess communication is now based on option symbol, expiry, strike, put/call rather than a unique symbol</p>



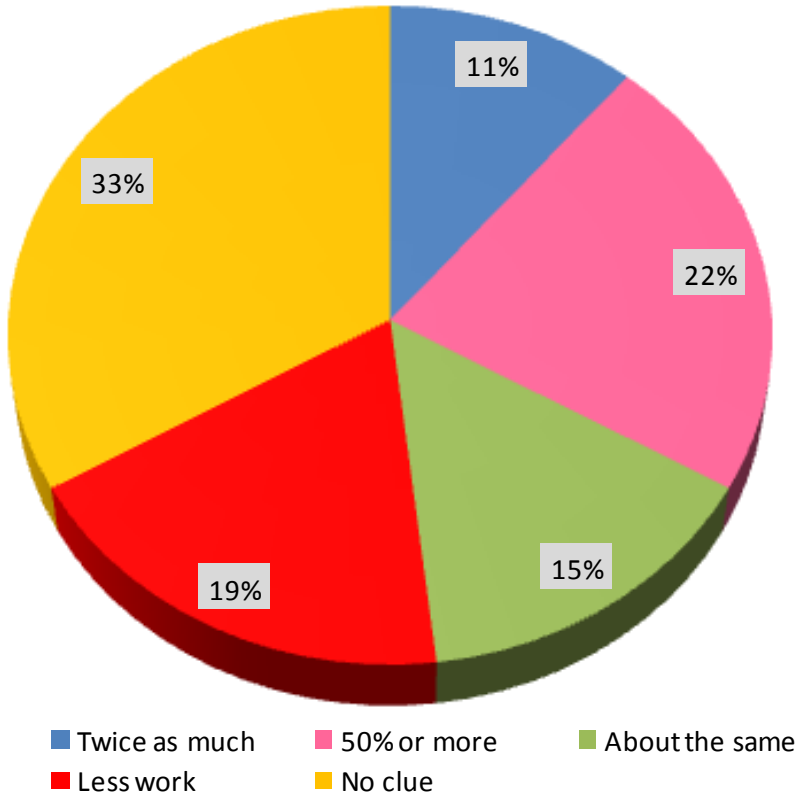
# FIF OSI Post-Mortem Survey

## OSI Implementation Process: Successes

Firm Type	OSI Successes
Broker Dealer	Clarity for end users and streamlining of client and business reports which depicts option contracts with clear identifiers.
Broker Dealer	During the testing phase my firm had an opportunity to see all the underlying issues/problems with the OPRA Symbol. Now, I'm a definite supporter of the OSI Key. Being involved in an industry wide initiative was exciting and it was interesting to see how the other firms defined their internal Option Identifier. This project was an enterprise-wide team effort that involved system changes to seven major internal applications. All the teams came together and met the delivery dates. Everyone was amazed when the project went live and we only had one minor issue.
Broker Dealer	1. Finishing. There's no additional revenue from this project, so it hard to be happy. 2. Having a better symbol display than OPRA for options. 3. Solving the leaps problems.
Broker Dealer	Dealing with OCC. They were very professional. We got clear answers from them all the time. Good planning. There was enough lead time allowed to facilitate detailed internal testing and street wide testing.
Broker Dealer	The ability of the industry to discuss and develop solutions to challenges quickly as they came up.
Broker Dealer	1. Once rolling, we had adequate time to implement, test, and deploy 2. Except for a few minor issues, deployment went very smoothly 3. Having a collaborative environment where exchanges, OCC, vendors, etc worked together, I believe all issues were discussed BEFORE changes were deployed to production and customers were impacted
Exchange	Smooth and timely implementation Strong leadership. Teamwork of OCC and Exchanges
Market Data Vendor	At the end of it all, organizations will benefit from the simplification of the options' representation. It virtually eliminates a few data maintenance 'behemoths' such as LEAP roll over. An option instrument is now completely recognizable with more immediate clarity.
Service Bureau	Successful implementation on 2/12/2010
Service Bureau	Once underway, the program was very smooth as the ability to project the workload was not difficult and risks were limited. The changes required were clearly definable. Additionally much of the report revamping and screen revamping was work that lesser skilled developers could perform
Service Bureau	The most satisfying part of the OSI project was the successful implementation on Feb 12th. Also, the consolidation events (so far) have been going very well.
Service Bureau	The internal teamwork - the project was a great accomplishment because of this.
Service Bureau	We spent a lot of time and resources working to complete this project early and accurately. This was validated when we began testing with the rest of the industry and our clients perceived us as being well prepared. This was verified when the conversion occurred successfully with negligible impact.

# FIF OSI Post-Mortem Survey

## OSI/Cost Basis Comparison: Resource Requirements



Firm Type	Implementation Effort Comparison to Cost Basis - Comments
Broker Dealer	Cost Basis covers all types of products versus OSI was centralized to OCC cleared options.
Broker Dealer	It is not clear yet as to what the total work effort will be for Cost Basis. It appears to be more focused within our Tax, TLA, Trade Entry and Transfer Systems, however there is still a significant amount of work over several years and contingent to the Legislative and Regulatory environment.
Broker Dealer	We believe we have most of the infrastructure already; someone else is managing the project for our company, but I believe it will not be nearly as invasive. OSI touched virtually every aspect of every product we have.
Broker Dealer	At min 50% because of amount of systems impacted, historic nature of data, standardization or mapping needs
Broker Dealer	Can't comment on the Cost Basis questions because this is being handled by another Business Process Group.
Service Bureau	Cost basis presents several issues for project management. The changes are complex, the requirements are not yet fully known, this is not limited to systems issues but includes substantial manual steps, and there is a large body of policies and procedures that must be developed. This was not the case with OSI.
Market Data Vendor	Being a market data vendor, Cost Basis is not a direct project undertaking for us. We will work with our clients to try and fulfill any new data requirements that may arise due to their Cost Basis compliance efforts. But this definitely highlights the need for an industry wide accepted common identifier (either a CUSIP or a code) for Options instruments before 2013, to enable smoother transaction tracking.

# FIF OSI Post-Mortem Survey

## OSI/Cost Basis Comparison: Similarities

Firm Type	Similarities between Cost Basis and OSI
Broker Dealer	No similarities. Effort for Cost Basis extremely high.
Broker Dealer	Similarities: Cost basis will have an impact firm wide and regulatory impact as did OSI. Cost basis is also industry mandated change.
Broker Dealer	Option symbol expansion is different than keeping tax lots- tax revenue drives cost basis while OCC drove the OSI initiative
Broker Dealer	1. Almost none. One is an accounting exercise (Cost) and one is a Ref. data issue (OSI). 2. They both effect most of our systems from front to market to backend.
Broker Dealer	Both are regulatory and with a solid deadline. OSI has a clear requirements but cost basis is not that clear.
Broker Dealer	Similarities: • Industry wide initiatives with ambiguity in requirements during early stages • Very aggressive time line to implement the project • Challenges in agreeing on the best approach to implement the project within the organization and at industry level. • Not having enough information about how other firms are implementing the project.
Broker Dealer	• Similar: Industry/Regulatory mandate, Significant amount of infrastructure work, Significant Customer impact. • Different: Focus is more on the Customer Reporting functions, Greater need for Legal review and interpretation, may have a great impact and change for Customers due to IRS Tax Reporting.
Broker Dealer	Broad reaching, affecting multiple systems and multiple operational groups, with distinction that cost basis affects even more of both types.
Broker Dealer	Touches many similar systems. More complex objective with Cost Basis and multiple deployment requirements / (years)
Service Bureau	Phased Approach with Cost Basis, where as OSI was a live cutover.
Service Bureau	They are both large industry initiatives that require significant effort and cuts across various parts of the organization. The investing public is both impacted by both initiatives.

# FIF OSI Post-Mortem Survey

## OSI/Cost Basis Comparison: Differences

Firm Type	Differences between Cost Basis and OSI
Broker Dealer	Differences: Wider array of products which will be phased in, in a 3 year timeline impacting the industry until January 2013. Application impact is higher due broader product coverage. Cost Basis tends to bring challenges that OSI did not from the aspect that most applications currently are not able to track and calculate cost basis which will require development for applications and an analysis for firms build or buy. Whereas, OSI all of the components were available and the goal was for the applications to use the components as identifiers going forward.
Broker Dealer	Option symbol expansion is different than keeping tax lots- tax revenue drives cost basis while OCC drove the OSI initiative
Broker Dealer	One is an accounting exercise (Cost) and one is a Ref. data issue (OSI). 2. They both effect most of our systems from front to market to backend.
Broker Dealer	Focus is more on the Customer Reporting functions, Greater need for Legal review and interpretation, may have a great impact and change for Customers due to IRS Tax Reporting.
Broker Dealer	Hard delivery dates with incomplete requirements Cost Basis will have broader organizational and client impact.
Broker Dealer	Differences: For us, the changes will be focused on a couple key components for Cost Basis whereas OSI was significantly more pervasive
Broker Dealer	End of cycle testing(Tax) as opposed to trade to clearance/settlement
Broker Dealer	Cost Basis will be a larger project from a work needed perspective. It impacts different areas internally. Back office, operations storage and client reporting
Service Bureau	Phased Approach with Cost Basis, where as OSI was a live cutover.
Service Bureau	Differences; - Cost Basis requires new policies and procedures – OSI only needed some minor procedural changes - OSI had a simple requirement that needed to be applied broadly – Cost Basis has a set of very complex requirements applied not quite as broadly - Cost Basis requires operational changes including establishing a new group/dept. to service cost basis while OSI did not require such actions - OSI was an industry initiative with all involved understanding what was needed to be done because it impacted all firms equally while Cost Basis is a tax initiative with the level of impact on firms being a product of what level of cost basis service they were currently providing Similarities: - Both projects are large scale - Both projects had the regulators starting out with a lack of understanding of the extent to which brokers have to make system changes. The IRS still seems to lack this understanding - Both projects require coordination across a company, but Cost Basis requires more - Both initiatives have impacts on customers, but Cost Basis has more
Service Bureau	<b>The difference - it will take an act of Congress - to delay cost basis.</b>

# FIF OSI Post-Mortem Survey

## Summary of Findings – Lessons Learned

Firm Type	Biggest Area for Improvement/Lessons Learned for Future
Broker Dealer	Replace an industry standard with another industry standard. OCC focused on their interests only and were hands-off with regard to all the other things that would be broken when the OPRA ticker went away.
Broker Dealer	Give more time to test planning and plan for longer testing periods.
Broker Dealer	It's important to get the questions related to design and flow answered early. Because, once you get a few of the answers... it generates more questions. These are very complicated not because any one process is difficult, but because there are many interlinked.
Broker Dealer	1) Test script preparation – a. More diverse set of test cases b. Better planning of test cases. There were changes to the test script so near the test date. c. Would have been more efficient if they publish the test script in the website instead of sending via emails. All those version changes on the script just became so messy. Its good that, during the latter part of testing, OCC was able to define some version control on the document. 2) Providing more up to date information about issues during Scripted Industry Testing. Blog was not effective or up to date enough, to prevent repetitious call to the exchanges.
Broker Dealer	Involvement of Market Data Vendors should have been required earlier in the testing process and have had more transparency.
Broker Dealer	A coordinated effort lead by an industry authority to recommend (not require) symbol display standard. • A clear specification and early publication of schedules by service bureaus, smart routing vendors, market data vendors, and exchanges. • Greater flexibility by partners to specific testing needs of individual firms
Broker Dealer	The key change would be to have gained agreement by the Exchanges to support a common Customer Options Symbol for Quoting, Trading and especially, Customer use. Technical constraints aside (we all have them), the Industry SROs and Utilities must understand that changes &/or new product implementations must be designed with close Industry member input and with an End to End focus. (Customer, B/Ds, Data Vendors, Clearing Utilities and Exchanges). OSI was more focused and designed for the Exchange and Clearance interface and the Customer impact was discounted and viewed as a B/D “only” issue/responsibility. Customer impact should be an Industry focus and responsibility ! Hopefully, the Equity Symbology Initiatives will be viewed and addressed in this manner also (End to End, starting/ending with the Customer in mind)
Broker Dealer	I would have liked to have the working group, OCC, or some entity "mandate" an industry-wide display symbology rather than "suggest" it. As a result, there are many, many variances for display format across firms.
Broker Dealer	I would hope that whichever group is behind the initiative has enough subject matter experts or resources on hand to answer questions efficiently and consistently. The only lacking area for OCC was that they were plagued by too few resources being the sole repositories of the knowledge around the symbology in question. Also, resources to build sufficient test files in terms of quantity, and sufficient product range would have helped to a greater degree.

# FIF OSI Post-Mortem Survey

## Summary of Findings – Lessons Learned – Contd.

Firm Type	Biggest Area for Improvement/Lessons Learned for Future
Exchange	More flexibility from parties involved More foresight in meeting future industry and customer requirements More extensive lessons learned process
Market Data Vendor	Things to repeat: definitive and responsive leader driving implementation * centralized industry meetings * documentation openly available to all including contact names and numbers * quick responses to questions Things to improve upon: * Leader who includes the entire impacted community * SEC involvement to ensure industry security solutions are carefully evaluated for impact to individual investors. Individual investors appeared to be something less than an afterthought in OSI. * Adherence to implementation schedules
Market Data Vendor	Even though vendors are competitors, we should share ideas more freely in the FIF conference calls.
Market Data Vendor	The loss of a market wide common code ought to be avoided. Overall, we felt the OCC's scheduling of the changes was very thoughtful and well planned - extensive parallel run allowing convenient cutover. Staggered consolidation.
Service Bureau	The regulators must listen more closely to the industry and accept industry suggestions more readily. On the other hand, the industry must take these initiatives more seriously earlier on and offer input at an earlier stage.
Service Bureau	This is not something I would change; rather entities involved in driving a solution for the equity symbology project (or any industry initiative) should draw on OSI's successes. They should take a closer look at how this project was run and how participants worked together toward a common solution, testing and implementation.
Service Bureau	A mandatory standard symbology would have been much better! LOPR-should have had more interactive processing and review-parallel was OK but with so much going on, it was like comparing apples and oranges. Changing the algorithm and updates versus add/updates was very different. Better SRO-FINRA communication please. There is a disconnect at times within the industry. We are pleased that the FIF is bridging the gaps!
Service Bureau	Requiring a consistent approach on what we replaced the old symbology with would have made the project significantly shorter and provided a less confusing result to the end user clients. One lesson learned: The consistent message from the OCC and the Exchanges that this project was not going to be delayed. This kept the priority high so it could not be put on the back burner.

# Going Forward

## OSI to Cost-Basis Reporting Knowledge Transfer

### Applying Lessons Learnt

A project governance schedule was very helpful. We were able to isolate absent vendors and create weekly standard regulatory reports and dependency tracking sheets. Dividing responsibilities into technology, operations and relationships helped to ensure smooth project management.

Cost-Basis is deep whereas OSI was broad. Cost-Basis has a long “tail” with a number of products being affected over a number of years, and the final conversion won’t be complete until 2013.

Cost-basis is probably three times as big as OSI. It touches every part of the transaction process – firms will have to onboard customers differently, complicated education and training is necessary, firms will need to train their own people and customers as well, and a lot has yet to be defined so firms can get started on this.

With the OSI initiative, no one had a 21 character symbol before the project began, so everyone in the industry was starting from the same place. With Cost-Basis, the starting points are very staggered and there are big differences from one broker to the next. While everyone needs to make changes to be compliant with the new regulations, some firms are starting with a Cost-Basis reporting system already in place and others have never done Cost-Basis reporting at all.

Although the industry saw modifications in the OSI process (such as production versus testing environments), the core principles of the initiative were defined at least a year prior to the deadline. On Cost-Basis, we’ll be lucky to get six months notice of the final regulations before we are expected to be compliant.

The OCC was very knowledgeable on the impact OSI would have on the industry and understood how business processes and technology would be affected. The IRS is not as familiar with the securities industry and does not have the deep understanding of the impact their regulations will have on a wide range of practices.

A standardized, recommended approach should be in place for Cost-Basis items not done through CBRS (e.g. physical transfers).

**The coordination that made OSI a success is not there for Cost-Basis. The OCC and FIF provided the strong leadership necessary to make OSI a cohesive and collaborative industry effort. Many participants feel that the industry needs a coordinated industry-wide approach, particularly for the purpose of setting standardization in areas where the IRS has chosen to provide vague definitions and in the testing of data, if Cost-Basis is to be a similarly successful project.**