



Rich Internet Applications: Better Practices for Financial Services

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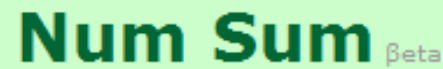


New technologies, new opportunities

Rich Internet Applications (RIA) are web applications that transfer some of the processing to the client end.

- RIA's typically:
 - run in a web browser, or do not require software installation.
 - Can be built to run without a HTTP connection (but this is rare)
- Macromedia Flex
 - Better, more industry standard, & faster Flash
- AJAX Technologies
 - Asynchronous JavaScript+CSS+DOM+XMLHttpRequest

Lots of new ideas from Web 2.0





Lots of new ideas



But: Financial Services have real problems

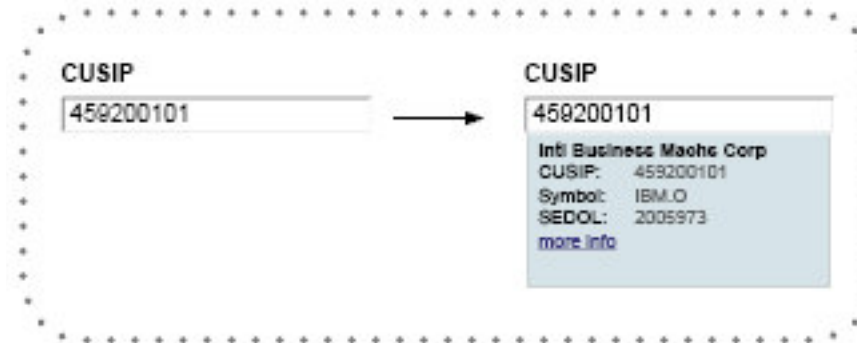
- Financial data is ridiculously complex
- FS applications are by nature highly transactional
- Time is money and training time is too much money
- If an application is not intuitive, users will not adopt it
- FS applications have people *whose job it is to use it*



Some Better Practices



Confirm data entry with info layers



Reduce errors by “unpacking” numeric codes

Display features as needed



Reduce page complexity with layers

Highlight changes


The diagram illustrates a user action: changing the trade currency from US Dollar to Thai Baht. An arrow points from the initial state to the final state. In the final state, the price column of the table is highlighted to show the effect of the currency change.

Trade Currency	Security	Ticker	Buy / Sell	Price
US Dollar	ABC corp	ABC.n	Buy	123.45
US Dollar	BCD corp	BCD.n	Sell	123.45
US Dollar	CDE corp	CDE.n	Buy	123.45
US Dollar	DEF corp	DEF.n	Buy	123.45

Trade Currency	Security	Ticker	Buy / Sell	Price
Thai Baht	ABC corp	ABC.n	Buy	4,805.291
Thai Baht	BCD corp	BCD.n	Sell	4,805.291
Thai Baht	CDE corp	CDE.n	Buy	4,805.291
Thai Baht	DEF corp	DEF.n	Buy	4,805.291

On complex pages, highlight the effects of user actions

Enable users to control *their* data

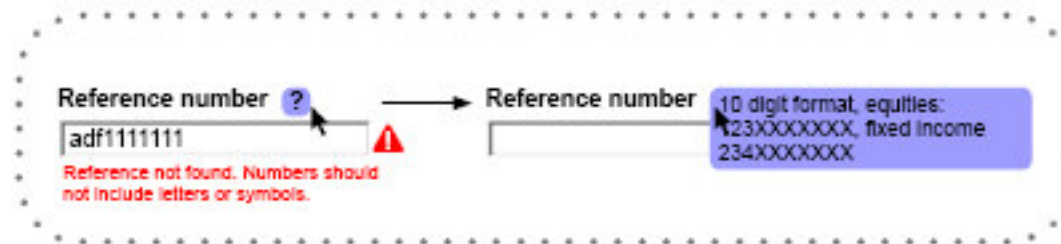


The screenshot shows a data table with a header row and four data rows. Above the table are several control options: 'Select All', 'None', 'Print selected', 'Export selected as EXCEL', and 'Delete selected'. The table has columns for 'Security', 'Ticker', 'Buy / Sell', 'Price', and 'Date Time'. Each row in the table has a checkbox in the first column. The table is enclosed in a dashed border.

	Security ▼	Ticker	Buy / Sell	Price	Date Time
<input type="checkbox"/>	ABC corp	ABC.n	Buy	123.45	01 JAN 2006 09:09:09 AM EST
<input type="checkbox"/>	BCD corp	BCD.n	Sell	123.45	01 JAN 2006 09:09:09 AM EST
<input type="checkbox"/>	CDE corp	CDE.n	Buy	123.45	01 JAN 2006 09:09:09 AM EST
<input type="checkbox"/>	DEF corp	DEF.n	Buy	123.45	01 JAN 2006 09:09:09 AM EST

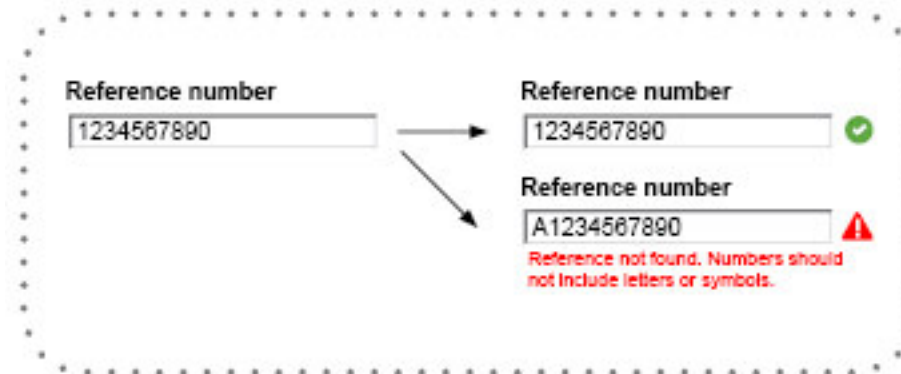
Let clients Search, Filter, Sort, and Export, or build a simple API and let them do it

Help users use help



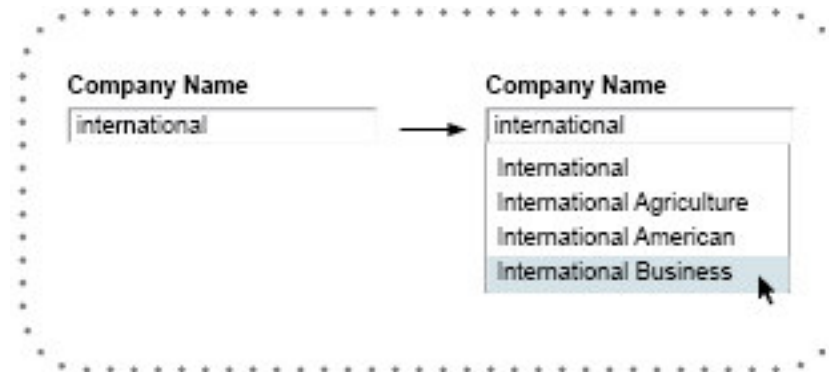
Put help where it can be found, when it is needed

Validate data during data entry



Finding errors **AFTER** submitting is unpleasant and inefficient: help the user avoid them

Suggest values during data entry



“Find as you type” need not be limited to search, but can speed up data entry tasks, such as company name

Design for the 80 AND the 20

The diagram illustrates a design for an expandable form section. It shows two states of a form element:

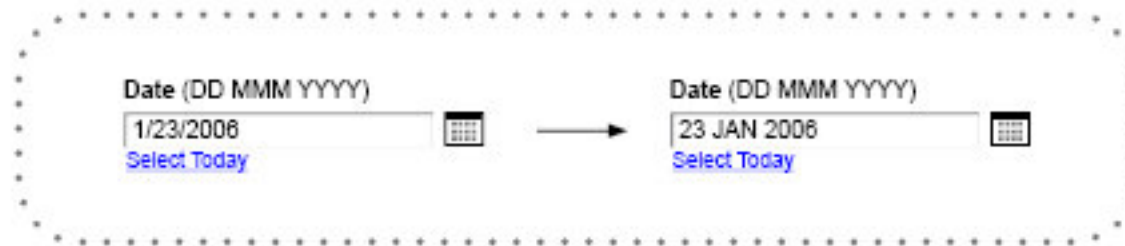
- Collapsed State:** A header bar labeled "Optional Fields" with a "Show" link and a downward-pointing arrow icon.
- Expanded State:** A form area containing four input fields arranged in two rows. The first row is labeled "Reference number" and "CATID", and the second row is labeled "Catalog number" and "SEC ID". All fields contain the value "1234567890".

An arrow points from the collapsed state to the expanded state, indicating the transition.

Optional Fields	
Reference number	CATID
1234567890	1234567890
Catalog number	SEC ID
1234567890	1234567890

Contain optional and rarely used form fields in an expandable section

Correct data format errors automatically



Inconsistent formats are a common cause of errors.
Fix them during the entry process and train the user

New challenges from new solutions

- No code, no problems
- Progress: a browser crash can now lose lots of data.
- Web based applications need to be tested like desktop applications: Regression testing can be difficult
- Breaking the browser: Reload and Back
- Customer / User Acceptance Testing processes need to be updated



More is possible = More will be expected



Thanks!

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