Feasibility and Risk Assessment
(Most Significant Issues)

Lead time on parts:
Much of the project's decisions depends on testing of materials, making lead time on parts an important matter to accommodate for. This has been countered by trying to order inexpensive parts as early as possible to aid in decision making. Many of the electrical parts that could be used in the final prototype have already been received, making the dependency on large orders at later dates less.

Mechanical size constraints:
Switching to a smaller size (.2" diameter instead of .5") sensor reduces, and possibly eliminates, the spacing concerns involved with the project. Minimal expansion to the existing keyboard shell will be required to allow for the essential circuitry and devices, leaving the spacing and dimensions of the familiar typing area intact.

Power Supply:
The current design is projected to yield a power consumption of 250mA or less, well under the .5mA capability of USB.

Force detection insufficient:
Many issues related to key strike detection dynamics such as frequency and duration can be addressed (if needed) by upgrading the I/O board. The current Phidget board is extremely helpful in establishing a proof of concept, initial design of the circuits and upon further research may provide the minimum specs required. If any of these specifications become lacking, upgrading to an I/O board with a faster sampling rate will address the problem.

Budget:
The initial build of materials projects the prototype to cost approximately $600 dollars. Most of the cost associated with the build comes from the sensors which have a small chance of being changed. With a budget of $1090, it is projected that the budget will not become a significant issue.

S/N Ratio:
Initial testing points towards a static S/N ratio of 800+, with dynamic testing in progress. Initial results suggest that the minimum specification of 10:1 will be surpassed handily.

Accuracy/Precision:
The rated tolerance of the force sensors is (+/-)5%. The mechanical error is still to be determined, and will depend on the final mechanical build design.

Customer Satisfaction:

Initial concerns around the scope of the project shifting seem to be well met by the customer. The transition from automatic use to learned functionality is accepted, and yields the highest potential use for the device. It is believed that providing a base multi-functional machine will allow for numerous software interpretations that may satisfy the customer, providing room for creativity and expansion by the software designers.