

Client Background

- Global leader in medical technologies
- Based on Dublin, Ireland and Minneapolis, MN
- Serves over 46,000 patients annually with solutions in cardiovascular, diabetes, neurological, spinal and surgical fields.



Problem Scope

- Inefficient process taking up to 14 days from submission to assigning sponsor dates
- Six different WR versions lacking standardization. WR forms are not integrated into a single software system.
- Redundant, compound, and poorly structured questions make forms difficult to automate.
- Absence of an edit feature forces sponsors to submit new WRs for changes.

System Models

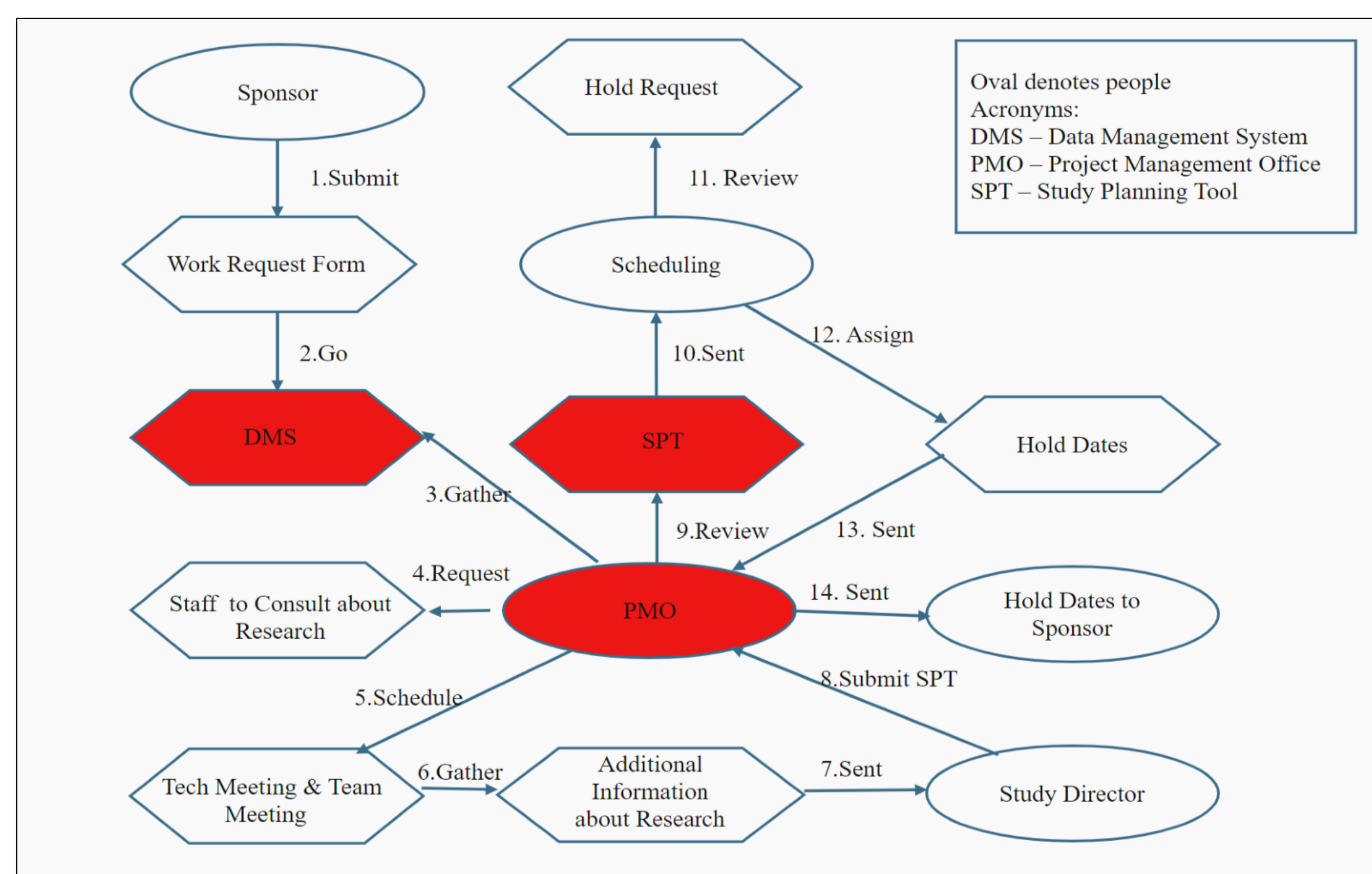


Figure 1: Original System Model

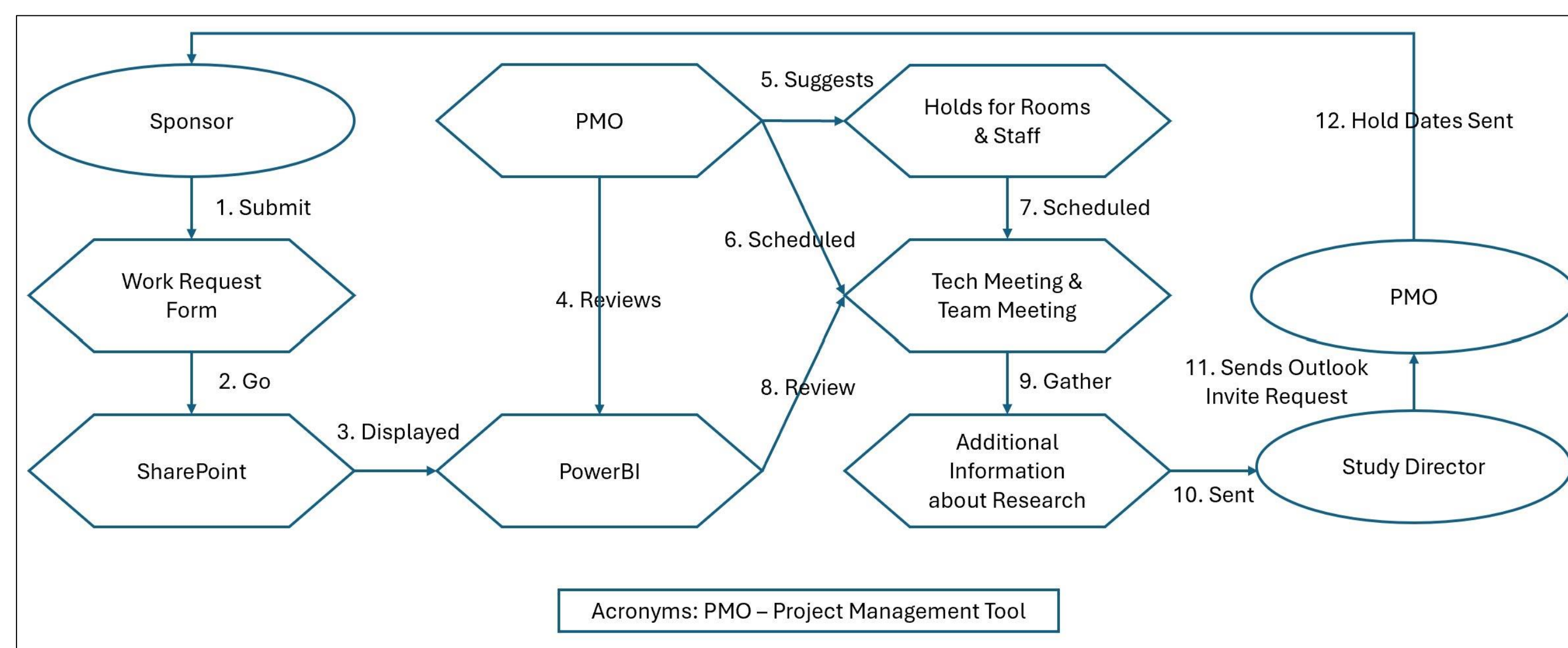
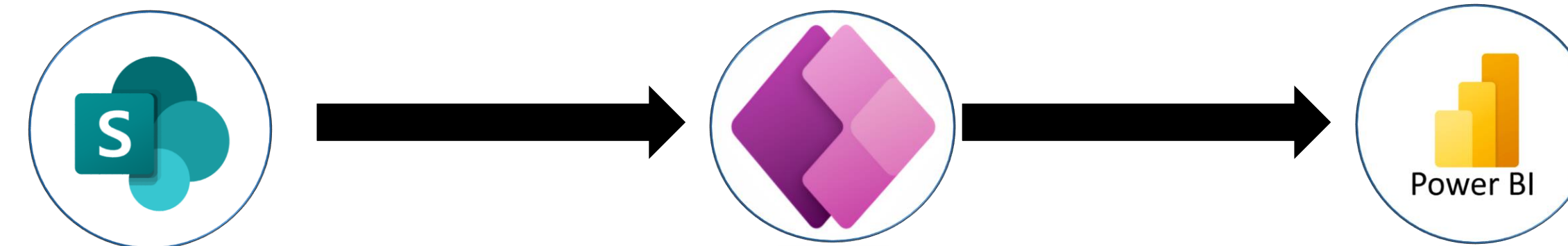


Figure 2: New System Model

Methodologies



The Work Request (WR) intake process was redesigned to improve efficiency and user experience. Microsoft applications were used to create a centralized system that consolidates all WR forms into a single, streamlined platform. Key improvements include:

- Consolidation of all WR forms into a single interface for easy selection and movement between forms (figure 3).
- Enhanced data accuracy with restricted numerical and date inputs, with the inclusion of a “Blackout Dates” section (figure 4).
- Simplification of redundant, compound, and poorly structured questions with some questions only appearing based on previous responses (figure 5).
- Reduction of manual processing and ability to edit forms after submission.

Solution

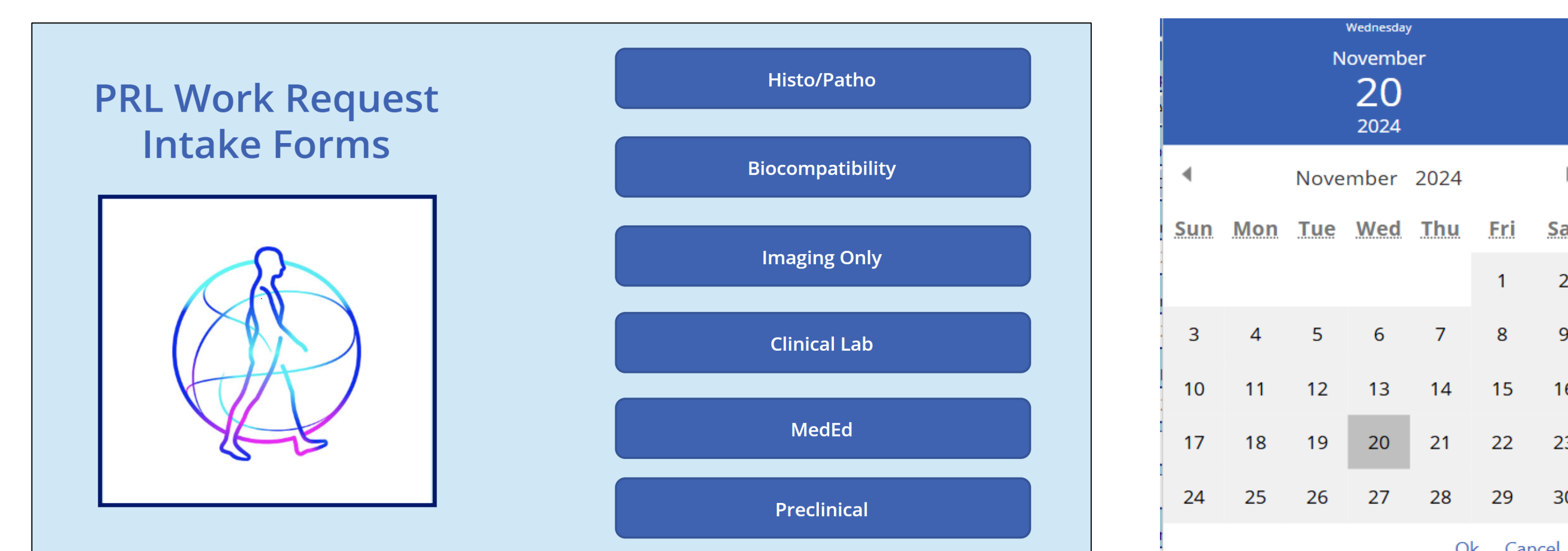


Figure 3: Consolidated WR Interface

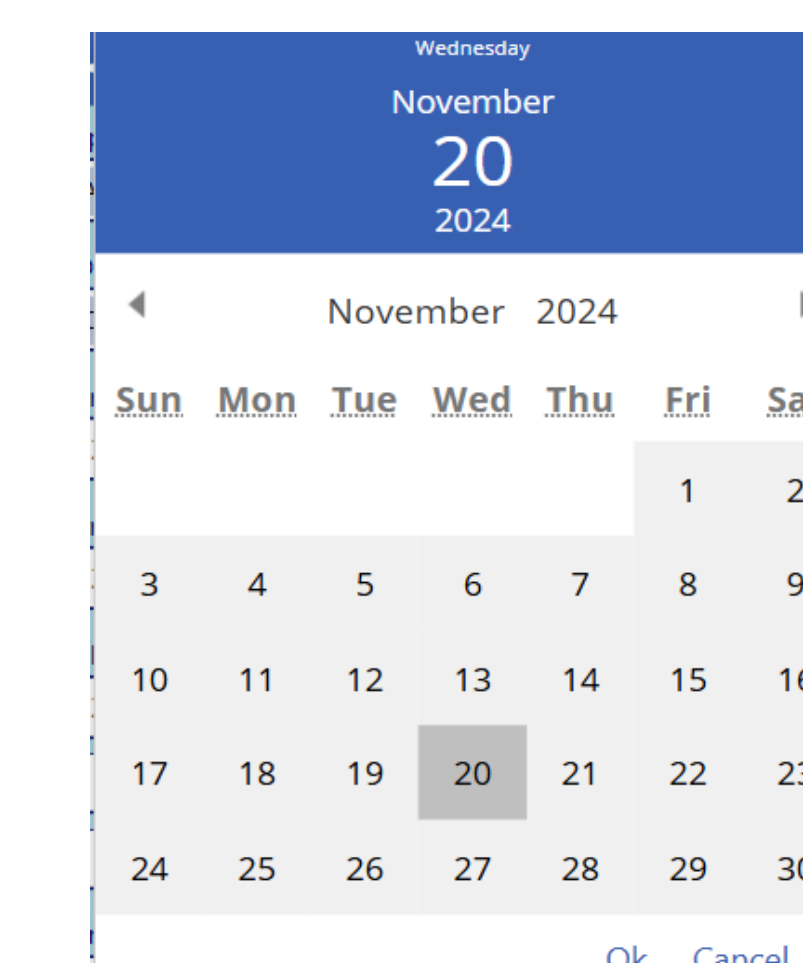


Figure 4: Date input Feature

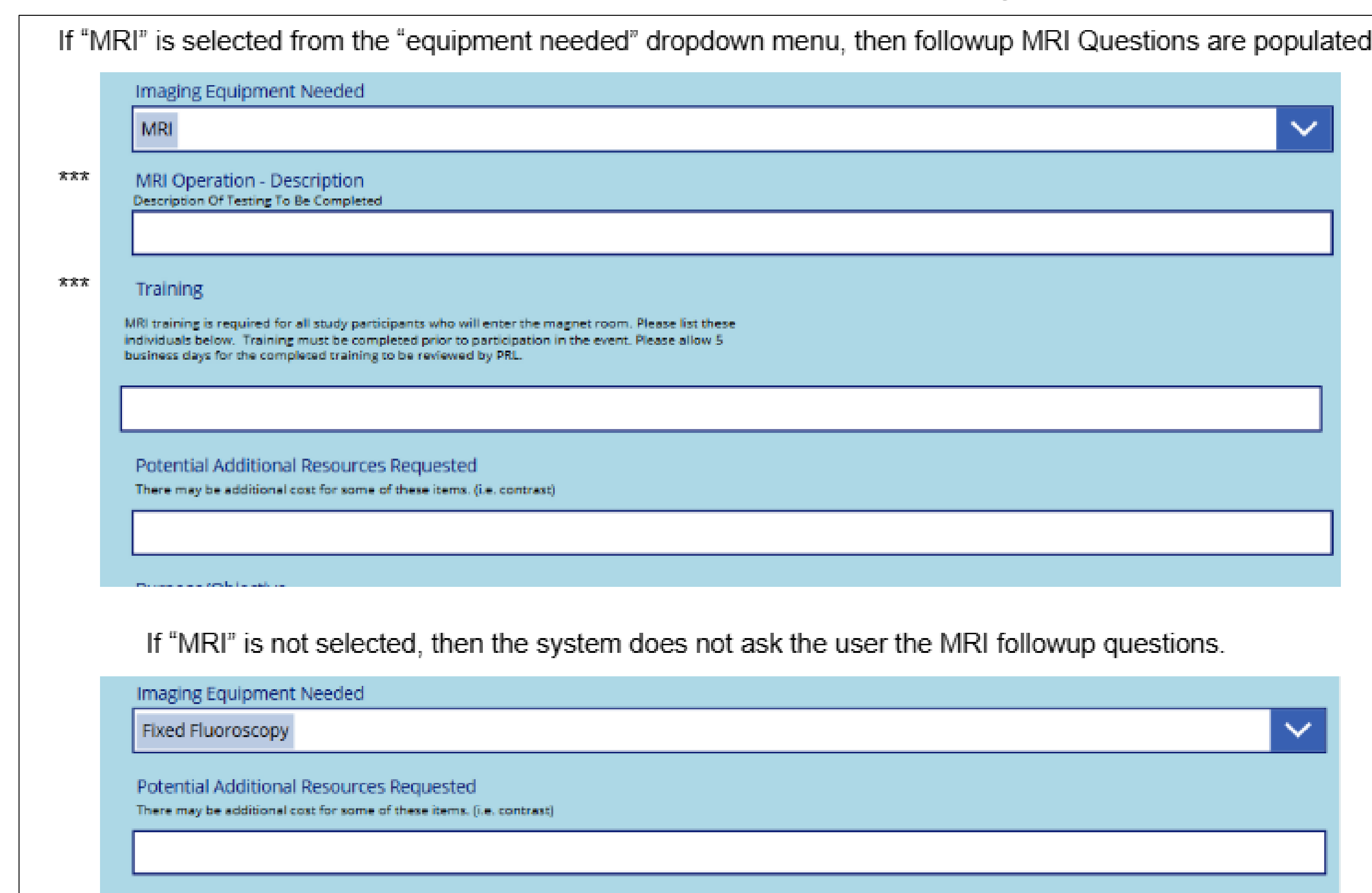


Figure 5: Simplification of Forms

Results

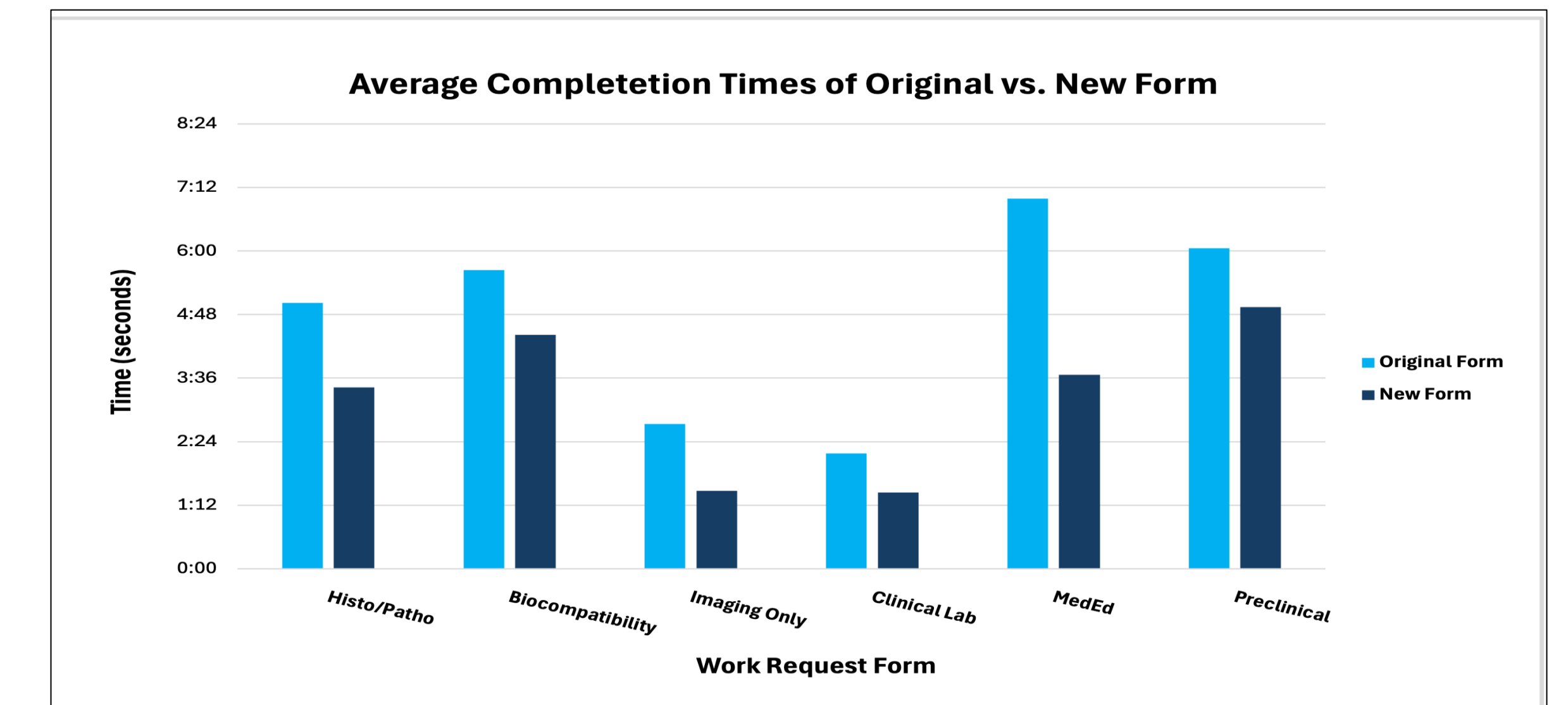


Figure 6: WR Experimental Data

- Average completion time reduced by **33.23%**
 - Estimated annual WR cost savings: **\$19,560.58**
 - Estimated annual labor cost savings: **\$127,571.77**
- Total Projected Return on Investment (ROI): **\$147,132.35**

Conclusion

- The team successfully redesigned Work Request (WR) forms using user feedback and Human Factors Engineering principles, integrating all forms into a unified software platform.
- The updated forms enhanced practicality by automating data exports, reducing manual efforts, and simplifying workflows for improved user experience.
- Calculations estimate substantial cost savings and a high return on investment (ROI) for Medtronic, showcasing the financial benefits of the redesign.
- Completion times were significantly reduced across all request categories, demonstrating the efficiency and scalability of the new WR intake process.

Future Work

A PowerBI Dashboard will be implemented to assist with scheduling. The proposed display design is pictured below.

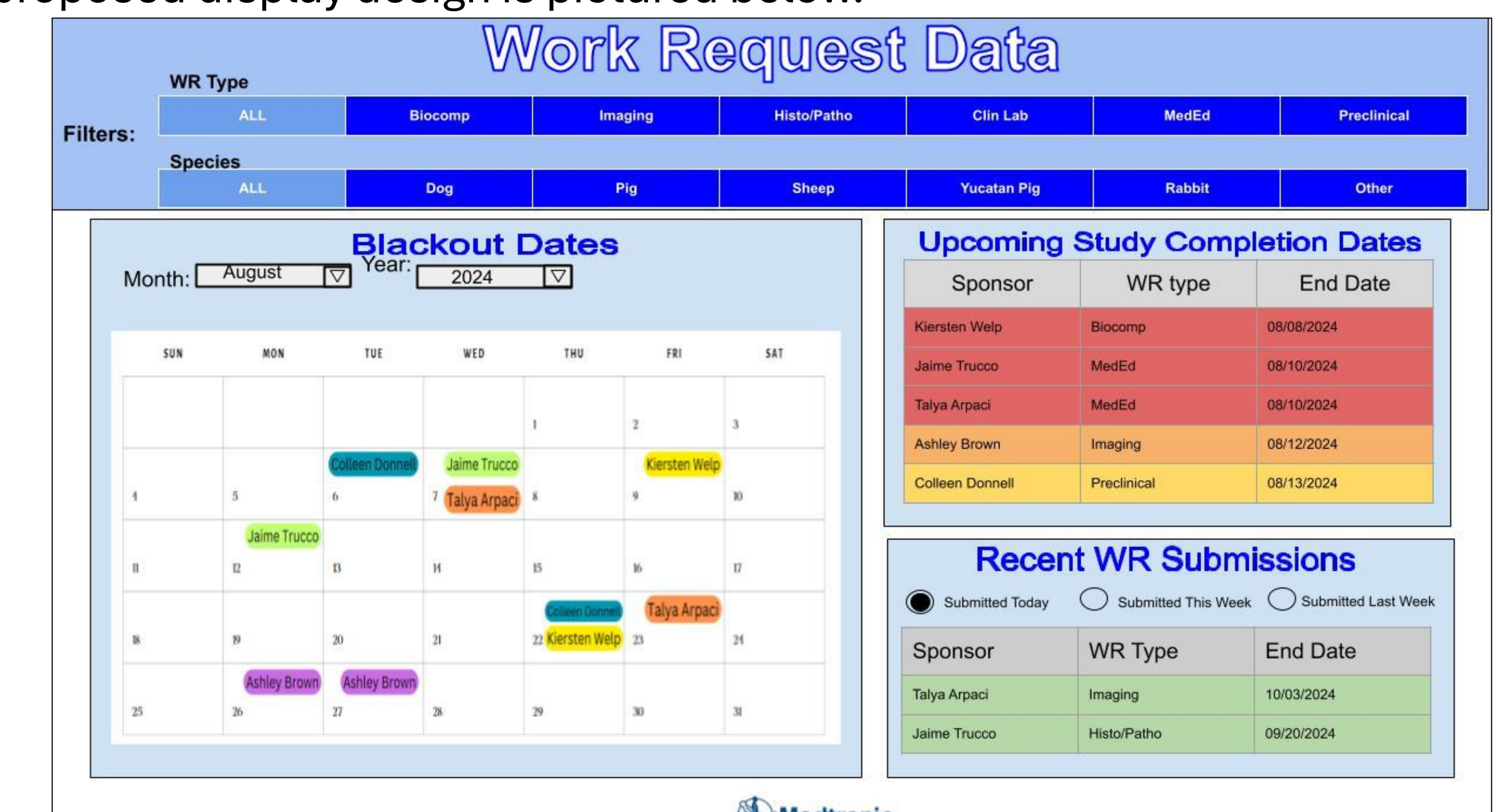


Figure 7: Future Work for Automation