Appendix A

Supplementary Data

Below you will find the research model constructs and the questionnaire item domains they consist of. They are structured so that **constructs** are marked in bold and item domains in *cursive*. Satisfaction, resistance to change and the intention to systematically integrate are exceptions to the rule as the domain name is equivalent to the construct name.

Following each item domain, how items were measured in the questionnaire (e.g., a 1-7 Likert scale) along with the items pertaining to that domain (e.g., MS1, MS2 etc.) are described. Note that a questionnaire item is equivalent to a question of the questionnaire.

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**User characteristics**

UC1 Sex (Male, Female)
UC2 Age (Years)
UC3 Work Group (Physician, Nurse, Ass. Nurse, Other)

**Social Factors (SF)**

*Management Support* (1; I strongly oppose 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)

Specify how the organizational support has been during the past months of implementation:

- MS1 I have been sufficiently educated and prepared to understand MetaVision
- MS2 I have received all the support I need to be able to use MetaVision for my purposes
- MS3 My superiors have encouraged me to use MetaVision
- MS4 I fully perceive that my superiors have supported me in learning MetaVision
- MS5 I have had close access to support and assistance when it comes to aid with using MetaVision

*Communication* (1; I strongly oppose 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)

The information about the PDMS project that I receive **formally** (e.g., monthly meetings, study days, meeting protocols):

- COMF1 Is relevant
- COMF2 Is sensible
- COMF3 Is received in a timely manner

The information about the PDMS project that I get **informally** (informal meetings in the corridor, over coffee in the personnel room etc.):

- COMI1 Is relevant
- COMI2 Is sensible
- COMI3 Is received in a timely manner

*User Participation* (1; Yes, 0; No)

- UP1 Project staff have kept me informed of progress and/or problems during the implementation
- UP2 During implementation, I have formally reviewed any work done by the project staff
- UP3 During implementation, I have formally approved any work done by the project staff
**System Quality (SQ)**

*Information Presentation* (1; I strongly oppose 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)

- IP1 The screen layout makes it easy for me to read the presented information
- IP2 The information is clear
- IP3 Overall, I think MetaVision presents data in a useful format

**Trust** (1; I strongly oppose 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)

- TRU1 I feel certain that I can use and trust in the advantages MetaVision provides
- TRU2 I feel that I cannot trust that MetaVision fully works because of too many uncertainties

**Perceived System Usefulness (PSU)**

*Disconfirmation* (1; Much worse than expected, 2; Worse than expected, 3; Somewhat worse than expected, 4; Neither or, 5; Somewhat better than expected, 6; Better than expected, 7; Much better than expected)

- DIS1 …to increase my performance was
- DIS2 …to increase my productivity was
- DIS3 …to increase my efficiency was
- DIS4 …to be useful for carrying out my duties was

**Confirmation of Expectations (CE)**

*Attitude*

Overall, using MetaVision is ______

- ATT1 (1; Bad, 2; _, 3; _, 4; Neutral, 5; _, 6; _, 7; Good)
- ATT2 (1; Stupid, 2; _, 3; _, 4; Neutral, 5; _, 6; _, 7; Wise)
- ATT3 (1; Negative, 2; _, 3; _, 4; Neutral, 5; _, 6; _, 7; Positive)
- ATT4 (1; Extremely negative, 2; _, 3; _, 4; Neutral, 5; _, 6; _, 7; Extremely positive)

… attitude towards using MetaVision

**Satisfaction (SAT)**

I am…with my MetaVision usage

- SAT1 (1; Extremely discontented, 2; Discontented, 3; Somewhat discontented, 4; Neither or, 5; Somewhat content, 6; Content, 7; Extremely content)
- SAT2 (1; Extremely frustrated, 2; Frustrated, 3; Somewhat frustrated, 4; Neither or, 5; Somewhat pleased, 6; Pleased, 7; Extremely pleased)
- SAT3 (1; Extremely uncomfortable, 2; Uncomfortable, 3; Somewhat uncomfortable, 4; Neither or, 5; Somewhat comfortable, 6; Comfortable, 7; Extremely comfortable)
- SAT4 (1; Extremely unsatisfied, 2; Unsatisfied, 3; Somewhat unsatisfied, 4; Neither or, 5; Somewhat satisfied, 6; Satisfied, 7; Extremely satisfied)

**Intention to Systematically Integrate (INT)**

(1; I strongly oppose, 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)

To introduce a major change like MetaVision in my work…

- INT1 …means that I need to prepare myself properly and in good time
INT2 …will demand a slow and intentionally planned integration
INT3 …tends to be the most successful when implemented gradually
INT4 …will not be done until I have reviewed a significant part of the information regarding MetaVision

Resistance to Change (RTC)
(1; I strongly oppose 2; I oppose, 3; I partially oppose, 4; Neither or, 5; I partially agree, 6; I agree, 7; I strongly agree)
I don’t want MetaVision to change:
RTC1 How I order and/or document samples
RTC2 How I make clinical decisions
RTC3 My cooperation with my coworkers
RTC4 In general, I don’t want MetaVision to change the way I conduct my work

Table 1 shows the hypotheses tested, the statistical means of the constructs, the U-value, and the probability value (p-value). As this analysis were performed on the combined population, the sample sizes for each group both number 42. Which construct confer to which group is indicated by the construct name followed by 1 for Q1 constructs and 2 for Q2 constructs. For this sample, the expected U-value is 882.

<table>
<thead>
<tr>
<th>Hypotheses tested with MWU</th>
<th>Statistical mean of the Q1 based construct</th>
<th>Statistical mean of the Q2 based construct</th>
<th>U-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1 = SQ2</td>
<td>.719</td>
<td>.754</td>
<td>729.5</td>
<td>.117</td>
</tr>
<tr>
<td>SF1 = SF2</td>
<td>.775</td>
<td>.792</td>
<td>791</td>
<td>.392</td>
</tr>
<tr>
<td>PSU1 = PSU2</td>
<td>.541</td>
<td>.599</td>
<td>714.5</td>
<td>.095</td>
</tr>
<tr>
<td>CE1 = CE2</td>
<td>.815</td>
<td>.912</td>
<td>601.5</td>
<td>.008</td>
</tr>
<tr>
<td>SAT1 = SAT2</td>
<td>.745</td>
<td>.809</td>
<td>697.5</td>
<td>.057</td>
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<tr>
<td>RTC1 = RTC2</td>
<td>.542</td>
<td>.551</td>
<td>860</td>
<td>.843</td>
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<tr>
<td>INT1 = INT2</td>
<td>.623</td>
<td>.625</td>
<td>859</td>
<td>.838</td>
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</tbody>
</table>

Table 1: Mann-Whitney U test results on the combined population.
Table 2 shows the $R^2$, path coefficient and p-values. “Path (from $\rightarrow$ to)” indicate the influence between constructs. I.e., “SQ $\rightarrow$ CE” suggests that SQ influences CE. Figure 1 is a depiction of the path model produced by the analysis.

<table>
<thead>
<tr>
<th>Path (from $\rightarrow$ to)</th>
<th>$R^2$ of target construct</th>
<th>Path coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ $\rightarrow$ PSU</td>
<td>.298</td>
<td>.262</td>
<td>.182</td>
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<tr>
<td>SQ $\rightarrow$ CE</td>
<td>.364</td>
<td>.135</td>
<td>.549</td>
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<tr>
<td>SF $\rightarrow$ PSU</td>
<td>.298</td>
<td>.327</td>
<td>.141</td>
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<tr>
<td>SF $\rightarrow$ CE</td>
<td>.364</td>
<td>.387</td>
<td>.036</td>
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<tr>
<td>CE $\rightarrow$ PSU</td>
<td>.298</td>
<td>.161</td>
<td>.361</td>
</tr>
<tr>
<td>CE $\rightarrow$ SAT</td>
<td>.652</td>
<td>.759</td>
<td>.000</td>
</tr>
<tr>
<td>PSU $\rightarrow$ SAT</td>
<td>.652</td>
<td>.102</td>
<td>.200</td>
</tr>
<tr>
<td>SAT $\rightarrow$ INT</td>
<td>.218</td>
<td>.036</td>
<td>.824</td>
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<td>RTC $\rightarrow$ INT</td>
<td>.218</td>
<td>.472</td>
<td>.308</td>
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</tbody>
</table>

*Table 2: PLS-PM results for the combined population.*
<table>
<thead>
<tr>
<th>Construct name</th>
<th>Statistical mean of the female group (Q1)</th>
<th>Statistical mean of the male group (Q1)</th>
<th>Statistical mean of the female group (Q2)</th>
<th>Statistical mean of the male group (Q2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>.808</td>
<td>.823</td>
<td>.847</td>
<td>.815</td>
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<tr>
<td>COM (F + I)</td>
<td>.712</td>
<td>.684</td>
<td>.733</td>
<td>.757</td>
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<td>UP</td>
<td>.400</td>
<td>.333</td>
<td>.411</td>
<td>.500</td>
</tr>
<tr>
<td>IP</td>
<td>.646</td>
<td>.656</td>
<td>.756</td>
<td>.667</td>
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<tr>
<td>TRU</td>
<td>.634</td>
<td>.703</td>
<td>.678</td>
<td>.656</td>
</tr>
<tr>
<td>PSU</td>
<td>.519</td>
<td>.477</td>
<td>.633</td>
<td>.536</td>
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<tr>
<td>CE</td>
<td>.762</td>
<td>.814</td>
<td>.903</td>
<td>.869</td>
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<tr>
<td>SAT</td>
<td>.685</td>
<td>.674</td>
<td>.808</td>
<td>.759</td>
</tr>
<tr>
<td>RTC</td>
<td>.586</td>
<td>.473</td>
<td>.577</td>
<td>.380</td>
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<tr>
<td>INT</td>
<td>.596</td>
<td>.611</td>
<td>.629</td>
<td>.594</td>
</tr>
</tbody>
</table>

*Table 3*: Q1 and Q2 average questionnaire item means split by females and males of the population.

*Figure 2*: PLS-PM output with the inclusion of a PSU to INT correlation.
Figure 3: PLS-PM output with no direct correlation between CE and PSU.

Figure 4: PLS-PM output with SQ removed from the model.
Figure 5. The edited model based on research results.

Figure 6. The unedited research model with the PLS-PM analysis values.