IPRO 349 2.1 Project Plan
June 26, 2007
Krakow, Poland

Map Reporting Component for Reports Book and CDN XL

ComArch Information Technology

Advisory: Dr. David Pistrui
Assistant Advisor: Zach Hench
Mentor: Marcin Budny

Team Members:
Krzysztof Drzyzdzyk
Katherine Hadou
Jessica Schmit
Przemyslaw Warzynski
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1.0 Objectives

IPRO 349 2.1 is focused on creating a prototype of a map reporting component that will be used as an addition to the ComArch Report Book software. The Report Book is a bundle of software used for data analysis that is not built in Excel. ComArch Report Books are used to analyze transactional data, as well as profit control data. For example, it interprets data collected from transactions at stores through the register data gathered during the day, but can also help companies analyze why profit margins are different in different regions. A chart explaining exactly what the program itself does can be found in Fig. 1.1.

Figure 1.1 Data Conversion for Mapping Component
The map reporting component will be added to the software in order to increase the value to the client. The objectives for this group are to create this prototype and track its progress from the gathering of user requirements through the actual development of the software using IT project methodology (Fig. 1.2). The methodology shows us an ideal model where none of the phases need to be repeated. In reality, however, it is expected that design, development and testing will be repeated many times before the project is actually deployed to the consumer.

Figure 1.2 Iterative Approach to Methodology
2.0 Background

ComArch’s Report Book is sold to many different types of clients. Based on ComArch’s main competitor, Dundas, Report Book caters to three types of business: financially based companies, software/ hi-tech ventures, and manufactures of consumer goods. A list of some Dundas’s clients are shown in the chart below.

![Marketing Targets Diagram](image-url)

**Fig. 2.1 List of Dundas Clients**
Report Book generally caters to medium-sized companies, which is defined as any business with less than 500 employees. Some of Report Book’s current customers are Sokolów SA and PKM Duda. However, with the added versatility that a map reporting component would offer Report Book, it would be possible to expand to large and even Fortune 500 companies, much like Dundas.

We know the client requirements that were passed down to us from our supervisor. The map reporting component will be an addition to the Report Book already in use. We are in charge of creating a program that will allow the user to display maps with pie charts, colors (as in winning candidate scenarios) and bar graphs. The data that is used to create these charts can comes from the operator of the software, ranging from when the product arrives at the warehouse to when the product is literally scanned to be purchased. One of the main goals of the product is to provide a sense of versatility to the consumer, so that it can be used in many different ways. The maps must also provide for a drill down feature (Fig. 2.2). The research and documentation team did research on the mapping components of other companies and the presentation can be seen in Appendix A, and as far as we know there have been no major attempts at creating mapping components for ComArch thus far.
As stated earlier, the reason for adding this component is to increase the value of the software to the client. The client will be able to analyze both transactional and control data. We will be using C# and Microsoft’s .NET Framework along with Visual Studio 2005 to write the code for the actual program, as well as Visio and Inkscape to create prototype maps for the client. Figure 2.3 shows the use-case scenario showing what each participant wants from the system. The programmers were given training programs and practice programming to do for the first three days of work, while the research and documentation team were given a short tutorial on how to use Visio and Inkscape.

Figure 2.3 Use-case Scenario
One of the main problems facing the group is the language barrier. Although we have one IIT student who speaks fluent Polish, some technical explanations take quite a while to be understood by both subgroups. Another problem we face is that the developers have never used C# before. As a result, they have had to have a “crash course” in programming with it, but their backgrounds in Java and C++ have helped them understand and use the new programming language. Finally, we have the problem that the research and documentation team have no programming experience, and very limited graphic design experience. We have overcome that problem by asking our supervisors and colleagues for help whenever we need it and playing around with the Visio and Inkscape programs to find new tricks and features.

Our plan is to divide the work necessary for the project between the two teams. The development team will do the actual coding necessary to create the program using C#. The research and documentation team will do any research necessary to complete the project, as well as complete all of the documentation required by ComArch and IIT IPRO. The IIT IPRO documentation includes most of what is necessary for the ComArch documentation, so any additional information will be added as needed.

3.0 Methodology/ Brainstorm/ Work Breakdown Structure

Currently, the ComArch Report Book has no way to geographically represent sales distribution, only non-specific bar and line charts. ComArch wants to be able to add a component to the Report Book to be able to generate Map Reporting. To develop this software, certain steps must be taken. First, what the customer wants must be understood, which has been established to be an easy and visual way to understand and predict sales outcomes. At this stage, very general planning must be crafted, such as how much ComArch is willing to spend on the development of this product and how much a consumer would be willing to pay for it. One of the first goals was to identify the advantages of ComArch’s competitors’ map reporting functions, which was researched by research and documentation team. ComArch understands that we will be unable to have a complete prototype finished in the 6 weeks we are here, so our prototype will be a simplified version of the final product.

After these capabilities have been charted out, the development team will get to work, figuring out the general outline and creating a blueprint for the program. The actual coding can then begin, as well as the construction and design of the logos and graphics the program will utilize, which will be the lengthiest phase of the project. The research and documentation will be utilizing graphic design programs, such as Inkscape and Microsoft Visio to create maps. These maps must then be broken down into smaller and more detailed versions, which is called “Drilling Down” (Fig. 2.1).

After all of this is completed, the program can be tested for possible errors. If problems arise, the program will return to the development stage to be corrected. Once the errors of the program are worked out, it will be in the final
stage of deployment, where the Map Reporting function will be able to be integrated into Report Book. This process is summarized in Figure 1.2.

Our team is only responsible for the prototype up to the development phase. Because of the wide variety of skills available within the team, given a longer time span, the entire process could be completed. However, it would be rather unreasonable to think that a wide variety of detailed maps and the actual coding for this complex function would be able to be accomplished in 6 weeks, so our supervisor has decided to guide us through the development phase.

To test the section of program created, fictional data created by Microsoft from an SQL server will be used, reporting on the financial transactions of a grocery warehouse called Northwind. Some of the products that will be tested using the map reporting component include tofu, Alice Mutton, Carnarvon Tigers, Teatime Chocolate Biscuits, Sir Rodney’s Marmalade, and NuNuCa Nougat-Crème. The computer automatically can test the program utilizing the information provided by the database, and the outcome of the testing will be shared with the Documentation and Research team to be documented. The program will also be manually tested by the Documentation and Research Team by entering existing data for a specific assigned function of the program. The expected outcome of the first original copies of the program will not work as planned and will need to be further modified. However, it is expected that eventually the program reaches the ability to analyze data appropriately to display a graphically detailed map.

The research and documentation team will meet regularly with the development team to exchange information about the coding and graphic design. Using the minutes generated at these meetings, the research and documentation team will create presentations of the progress to be shared with our supervisor and the rest of the team through Word, Excel and Powerpoint documents and post them on iGROUPS to be available to the rest of the IPRO. For example, a presentation was made to discuss the pros and cons of the existing ComArch Map Reporting Components as well as those of ComArch’s competitors. This type of research will be continued throughout the IPRO to ensure the cohesiveness and effectiveness of the team. IPRO deliverable documentations will be generated in the same way, with the team discussing the progress of the project, and the research and documentation team converting these records into a detailed, yet concise report. The research and conversion of all the technical data to text files will be documented by the research and design team using a combination of Word and Excel.
4.0 Expected Results

The expected result is the development of the Map Reporting component that can be tested and eventually added to the Report Book function to visually allow users to view sales through maps. Chunks of the program will be developed slowly, and as each individual function becomes written, a test will be performed, utilizing the Microsoft Northwind data, to insure the functionality of the program.

A working prototype will be developed within the IPRO, utilizing a sample map of Poland. Although this will not be able to be directly implemented into the Report Book program, this will be able to be further developed and tested into the fully working, much more complex function that can be added into Report Book. Full documentation of the process will also be completed during the IPRO.

5.0 Schedule of Tasks/Milestone Events

<table>
<thead>
<tr>
<th>Task</th>
<th>Assigned To</th>
<th>Due By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meetings</td>
<td>Marcin Budny</td>
<td>Throughout</td>
</tr>
<tr>
<td>Programming Prototype</td>
<td>Development Team</td>
<td>Throughout</td>
</tr>
<tr>
<td>Project Plan</td>
<td>Research and Documentation Team</td>
<td>June 26, 2007</td>
</tr>
<tr>
<td>Midterm Report</td>
<td>Research and Documentation Team</td>
<td>July 6, 2007</td>
</tr>
<tr>
<td>Exhibit/Poster</td>
<td>Research and Documentation Team</td>
<td>July 23, 2007</td>
</tr>
<tr>
<td>Abstract/Brochure</td>
<td>Research and Documentation Team</td>
<td>July 24, 2007</td>
</tr>
<tr>
<td>Presentation</td>
<td>Research and Documentation Team And Development Team</td>
<td>July 24, 2007</td>
</tr>
<tr>
<td>Final Report</td>
<td>Research and Documentation Team</td>
<td>July 25, 2007</td>
</tr>
<tr>
<td>Meeting Minutes</td>
<td>Research and Documentation Team</td>
<td>July 25, 2007</td>
</tr>
<tr>
<td>CD of Deliverables</td>
<td>Research and Documentation Team And Development Team</td>
<td>July 27, 2007</td>
</tr>
<tr>
<td>IPRO Day</td>
<td>2 presenters (1 AGH, 1 IIT), TBD</td>
<td>July 27, 2007</td>
</tr>
</tbody>
</table>
### 6.0 Team Members and Assignments

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Major</th>
<th>Sub-Team</th>
<th>Skill Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krzysztof Drzyzdzyk</td>
<td>AGH</td>
<td>Applied Computer Science</td>
<td>Development</td>
<td>English, Microsoft fluency, typing skills, C++, C, Java, ADA</td>
</tr>
<tr>
<td>Katherine Hadou</td>
<td>IIT</td>
<td>Biology Biochemistry and Premed Focus Music Minor</td>
<td>Research and Documentation</td>
<td>Typing and research skills, Microsoft fluency, Polish fluency, communication skills, IPRO experience, helps parents run small business</td>
</tr>
<tr>
<td>Jessica Schmit</td>
<td>IIT</td>
<td>Biology Psychology Premed Focus</td>
<td>Research and Documentation</td>
<td>Typing skills, Dreamweaver, 3DMax, Microsoft fluency</td>
</tr>
<tr>
<td>Przemyslaw Warzynski</td>
<td>AGH</td>
<td>Computer Science</td>
<td>Development</td>
<td>English, Java, Eiffel, C++, Microsoft fluency, some graphic design experience, typing skills</td>
</tr>
</tbody>
</table>

**Fig. 6.1 Team Member Information**

Team Leader/Mentor: Marcin Budny

Because our sub-teams have only two members each, we decided that sub-team leaders would be unnecessary. The research and documentation team is in charge of doing any research required for this project, such as what ComArch already has in place regarding mapping components and what other companies have in place. They will also be in charge of all documentation that IPRO and ComArch require for the team. Finally, the research and documentation team will create a sample map using Visio and Inkscape. The development team will use C# and create the actual prototype mapping component.
7.0 Designation of Roles

Marcin Budny gives the team an agenda before each meeting, during meetings Katherine Hadou will take minutes, and Jessica Schmit will transcribe the notes and compile them. Marcin Budny is in charge of keeping the meetings on-track and on-time. Because of the work environment provided by ComArch and because everyone is expected to contribute the same hours (9:00-17:00 Monday through Friday), no timesheets are needed. A master contact sheet has been made for the entirety of IPRO 349 by Zach Hench; no master schedule is needed due to the proximity of all members’ living spaces and the common work hours. Jessica Schmit and Katherine Hadou are in charge of posting group deliverables to iKnow and iGroups.
Appendix A

Headquarters: Krakow, Poland

Faults:
Not eye-catching
Organized
Not quite enough information
Somewhat confusing for small business owners without computer gurus on staff
Ambiguous descriptions
No specific section for map reporting component
No price range
DOES NOT SHOW UP ON GOOGLE SEARCH!

Features:
AMAZING DEMO
Automatic SNMP topology discovery
Logical network map, with the visualization of network equipment status
Geographical base system coverage map
  Integrated state and performance information
Map is more detailed, animated
Device inventory performance monitoring
  Including trends and thresholds
Network related tasks scheduling and monitoring
Real view map, coordinate plane
More offered than with any other company
Faults:
Simplistic
Versatility is questionable
24-hour support only through email
No packages

Features:
CHEAP - $199
Chart options for map, wide-range resolution support, custom background
VERY user-friendly, colorful, catchy
Today's Tip of the Day from Dr. Presentation
Minimal effort, no installation needed (smartCh@rt technology), cut and paste from Excel
Direct support for Oracle, Microsoft SQL, MS Access (MDB) and ODBC database loading
Supports JPEG, TIFF, PNG, BMP, WMF and GIF image formats
AVI movie format
Language options, map options
Free, unlimited, 24-hour support
Zip-compression of charts
Direct email attachment
Home page includes:
Buy Now link, Guide link
Key features
Top reasons to buy
Examples, tips
Headquarters: Sacramento, California, USA

Faults:
AWFUL DEMO
Extension Pack
A lot of information needs to be downloaded

Features:
Information downloads provided
Most maps available
Price: $1499
Extension to ChartFX - $2699
FLEXIBLE!
Not just geographic maps
Headquarters: Toronto, Ontario, Canada

Faults:
Lengthy tutorial
   Not hands-on
Predefined maps from library

Features:
Appears on all pertinent Google Searches
Cost - $699
Informative tutorial
Built-in panning and zooming
World and continent maps
Predefined maps from library
Serialize maps as XML or binary
Symbols/pictures attached to all/some layers
Distance scale/legend/color configuration
Headquarters: Toronto, Ontario, Canada

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Predefined maps from library
Serialize maps as XML or binary
Symbols/pictures attached to all/some layers
Distance scale/legend/color configuration
Headquarters: Albuquerque, New Mexico

Faults:
Requires a LOT of extra software
No links on the site; long and lengthy
No demo

Features:
Uses OLAP technology and supports all ODBC compliant data sources
Integrated with Microsoft Office and paste graphs directly, export data from Excel
Drag and drop data elements
Real time GIS data mapping provides visualization
Creates new elements without touching the data source
Headquarters: Emeryville, California

Faults:
Customer representatives must call to use demo
Exclusively used for tracking email campaigns, newsletters and discussion groups
Powered by Yahoo Maps
Only have maps from the United States

Features:
Very cheap (starting at $675)
Free downloads for up to 200 people
HTML editor
Large Image Library, with drag and drop simplicity
Headquarters: Emeryville, CA

Faults:
Minimal cost is $10,350
$50 minimum for support
Cannot import from Excel directly
Very technical website

Features:
Supports custom grouping and multiple group levels
Binds more data sources than any other grid (jagged arrays, ILists, IListSources)
Unlimited-size fixed header and footer regions that versatile
Lots of VB.NET and C# samples
Headquarters: McLean, Virginia

Faults:
Relatively pricy
Very long tutorial, without any “do-it-yourself” usability
Website is bland
Minimal of $749 for year-long of support
$300 2 hours training session
Requires Microsoft Analysis Service
Relatively expensive ($5,000 per processor)

Features:
User-friendly website
Versatility (allows you to adjust cube dimension and measure selections)
Wide variety of standard charts
Animated flash charts
Imports data directly from Excel
Able to create into PDF
Bibliography


