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Everything I Need to Know About Data Warehousing I Learned from a U.S. Army Survival Guide...

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ABSTRACT

Three years ago, after eight years of experience supporting business needs in a SAS® mainframe environment, I embarked on a new journey, formal Data Warehousing using SAS Client/Server tools and Data Warehousing methodologies. Two years ago, my colleagues and I began the physical implementation of our new Client/Server SAS environment. Since then, we have made tremendous strides towards meeting our objectives.

Making the switch from informal data warehousing in a mainframe environment to formal data warehousing in a Client/Server environment is not easy. It's worth it, but it's not easy.

The US Army survival guide referenced is concerned with providing the essentials needed in life and death survival situations. Certainly data warehousing is not, in the real sense, a life or death issue. However, in a business sense, the success or failure of current data warehousing initiatives can mean life or death to an initiative, a division, a product or job. Therefore, by simply equating the term "survival" in the army manual to the word "success" in the data warehousing arena, we can derive what is essential to building and maintaining successful data warehousing projects using the SAS® System.

INTRODUCTION

For over twenty years my predecessors, colleagues and I have used SAS and other languages in a mainframe environment to meet our clients' needs. But recent innovations in technology and systems architecture such as relational data base management systems, client/server architecture and the internet lead us to seek new SAS Client/Server tools and Data Warehousing methodologies in order to:

1. Build and maintain MIS (Management Information Systems) data warehousing projects.
2. Provide end users with well designed query tools via the internet.
3. Reduce redundant processes.
4. Minimize overhead costs.

Two years ago, my colleagues and I began the physical implementation of our new Client/Server SAS environment.

OUR INITIAL CONFIGURATION

Hardware - one HP-UNIX K-360 1-way Unix 10.2 operating system

Software - a suite of SAS® version 6.12 products including Base SAS, SAS/EIS® software, SAS/MDDDB® server, SAS/ACCESS® to ODBC and PC files, SAS/IntrNet® software, SAS/CONNECT® software, SAS/AF® software, SAS/FSP® software, SAS/SHARE® software and SAS/Warehouse Administrator® software.

Since then, we have made tremendous strides towards meeting our objectives. We have re-engineered a strategic business system process into a working Data Warehouse solution, reducing quarterly processing time from four months to two days, provided web-enabled OLAP query tools to end users via the intranet, upgraded, redesigned and implemented our physical operating environment to prepare for future deliverables, and continued to pursue optimal design and implementation of our data warehousing efforts.

Our current configuration has grown to include a "development" environment for application developers and power users and a "deployment" environment for deploying end-user inter/intranet applications:

DEVELOPMENT ENVIRONMENT

Hardware - one HP-UNIX L-2000 440 mghzt 1-way Unix 11.0 operating system

Software - a suite of SAS® version 8.1 products including Base SAS, SAS/EIS® software, SAS/MDDDB® server, SAS/ACCESS® to Oracle, Sybase and PC files, SAS/IntrNet® software, SAS/CONNECT® software, SAS/AF® software, SAS/FSP® software, SAS/SHARE® software and SAS/Warehouse Administrator® software.

DEPLOYMENT ENVIRONMENT

Hardware - one HP-UNIX K-440 2-way Unix 11.0 operating system (with planned testing of an N/T server with 4 processors.)

Software - a suite of SAS® version 8.1 products including Base SAS, SAS/EIS® software, SAS/MDDDB® server, SAS/IntrNet® software, SAS/CONNECT® software, and SAS/SHARE® software, (with planned testing of Scalable Performance Data Server® and WebHound™ software.)

While vacationing at a Carolina beach and thinking of how to present the message I have to share about my data warehousing experiences, I was paging through a book, [FM 21-79 Reprint of Department of the Army Field Manual: US ARMY SURVIVAL MANUAL](#) and came across an amazing correlation. Here I found the sentiments I was struggling to express, communicated with the clarity and simplicity of the US Army. Based on this connection, following is advice on building and sustaining data warehousing initiatives in the modern world.

GETTING STARTED

In preparation for a survival (or successful) experience, you must "1) train in different environments and 2) learn about the area where you are going (US Army 1-1)."

In other words, begin by researching technologies and applications, identifying operating systems, data bases and platforms to be included in your data warehouse environment, and getting hands on

experience with a variety of access, transformation and delivery methods and tools. Then, have a vision, an idea, a plan, for the solution that your situation might dictate. Understand your company, your industry and your own goals, plans and direction in order to integrate the most useful information.

AVOID COMPLICATIONS

“Two of the gravest general dangers to survival are the desire for comfort and a passive outlook. You must recognize that these dangers represent attitudes – attitudes that follow lines of least resistance, that overrule your effort or desire to cope with stress, that make your primary concern the immediate situation rather than the overall problem ... (US Army, 1-3).”

There is no doubt implementing new hardware, software and concepts is stressful. Sometimes “doing it the old way” seems desirable. But giving in to obstacles leads to abandonment of the overall vision, plan or idea for the future.

“To overcome the first danger - *the desire for comfort* – you need to change the way you think of comfort...compare your present discomfort with the discomfort you will face if captured (US Army, 1-3)”

Preferring to “do what you know” is understandable. But formal data warehousing requires delving into unknown areas such as new software, hardware and processes. To put your data warehousing efforts into perspective, think of what the alternatives are if your data warehouse project fails.

“To avoid the second danger - *the passive outlook* - you should know what can bring it on)” Conditions such as exhaustion, weakness, illness and a lack of will contribute to a passive outlook and can be avoided with proper planning. We should notice these conditions in ourselves as well as our companions and stop or counter the physical or mental stress causing the outlook in others and us. (US Army, 1-3)

On the Data Warehousing front, pain, cold, heat, thirst and hunger in the physical sense, should not be primary concerns. (However, with a little imagination some analogies can be drawn.) More likely, fatigue, boredom, loneliness and frustration with or fear of new technologies will be the main contributors to an “I don’t care” attitude.

Fatigue, mental or physical, “can be relieved with rest, change of activity, mild exercise and conversation with others (US Army, 1-5).”

Boredom, caused by repetitiveness and uniformity, can bring on feelings of strain, anxiety and depression, especially when no end is in sight. Keeping survival (success) goals in mind and realizing how the tasks you perform contribute to the overall picture will help. (US Army, 1-5).

Loneliness is associated with being isolated under trying and threatening conditions. Self-sufficiency plays a major role in combating these feelings. Do not sit down and worry! Prepare to be active. Plan and think with deliberate purpose. Explore new situations and act accordingly. (US Army, 1-5).

ADOPT THE RIGHT ATTITUDE

Having a survival (successful) attitude for whatever happens is extremely important. Use and mean phrases like “I can make this work”, “I just don’t and won’t give up”, and “I can not afford to be too excited or too upset about anything that happens.” A person without the positive mental attitude necessary may give up when the going gets tough.

After all, as Emily Saliers of the Indigo Girls says...

“You’ll never fly as the crow flies, get used to a country mile. Learning to face the path at your pace, every choice is worth your while.(Nomad, Saints and Indians, 7)”

S-U-R-V-I-V-A-L ACTIONS

The [US Army Survival Manual](#) shows how to use the word “survival” as a mnemonic device to help guide soldiers actions behind enemy lines. You can use the same device to help guide your data warehouse planning and project management.

S “*Size up the Situation ...Size up Your Surroundings ...Size up Your Physical Condition ...Size up Your Equipment* (US Army, 1-7).”

U “*Undue Haste Makes Waste* (US Army, 1-7).”

R “*Remember Where You Are* (US Army, 1-8).”

V “*Vanquish Fear and Panic* (US Army, 1-8).”

I “*Improvise* (US Army, 1-8).”

V “*Value Living*, US Army, 1-9).”

A “*Act Like the Natives*, US Army, 1-9).”

L “*Live By Your Wits, but for NOW*, US Army, 1-10).”

PUTTING SURVIVAL ACTIONS INTO PRACTICE

“S” IS FOR “SIZING UP”

“*Size up the Situation* (US Army, 1-7).”

What are the business problems you need to address?

“*Size up Your Surroundings* (US Army, 1-7).”

What resources are available to you?

“*Size up Your Physical Condition* (US Army, 1-7).”

What hardware, software and operating systems will be included in your data warehousing project?

“*Size up Your Equipment* (US Army, 1-7).”

What development tools are currently available?

What else do you need?

“U” IS FOR “UNDUE HASTE MAKES WASTE”

Take your time, especially during the planning phases. Mistakes are possible, even probable, when you react too quickly, without thinking details through. (US ARMY, 1-7).

Whether we like it or not, planning IS the most important part of data warehousing. This makes knowing how to plan very important. Much has been published about data warehousing methodologies and practices, team building and the importance of teams, project management and the like. You must find practical ways to implement project planning/management and data warehousing methodologies into your real world implementations.

“R” IS FOR “REMEMBER WHERE YOU ARE”

Always be able to “spot your location on a map and relate it to the surrounding terrain (US Army, 1-8).” Make sure others with you are able to do the same. Always know who has the “map and compass” and be prepared to take over for that person if he or she becomes disengaged from the project. Pay close attention to where you are and where you are going. Do not rely on others to keep you on the right track. (US Army, 1-8).

True data warehousing initiatives require focused strategic planning on many fronts. You must contend with corporate and divisional initiatives, technical guidelines and restraints, and ever changing business needs and requirements. Knowing where and how your individual and departmental goals and objectives fit into the big picture is very important. Change in leadership is not uncommon and should be expected from time to time. Successful data warehouse projects do not rely or depend on individual contributions alone to be successful. Instead, team effort and shared leadership ensure data warehousing successes.

“V” IS FOR “VANQUISH FEAR AND PANIC”

If left uncontrolled, fear and panic can destroy your ability to make intelligent decisions causing you to react to fear and imagination rather than to the situation. Training and self-confidence will enable fear and panic to be vanquished. (US Army, 1-8)

According to the Webster’s Ninth New Collegiate Dictionary, self-confidence is defined as “confidence in oneself and in one’s powers and abilities.” Confidence is not an easy quality to teach or learn. Training, on the other hand, is plentiful and readily available. And

knowledge builds self-confidence.

Training exists in many forms. You and your team must actively pursue training in every fashion available. On and off site training is available from SAS Institute, Inc. and many other software and hardware vendors. Your data warehousing plans should include formal training at regular intervals. But there are many other ways to integrate training into your every day activities such as CBT (Computer Based Training), training resources internal to your individual organization, peer to peer knowledge transfer and individual research. Formal and informal training should play a dominant role in your data warehousing efforts.

“I” IS FOR “IMPROVISE”

“Learn to improvise. Take a tool designed for a specific purpose and see how many other uses you can make of it. Learn to use natural things around you for different needs (US Army, 1-8).” No matter how much planning you do and how prepared you are, not everything will go as planned. Use your imagination. (US Army, 1-8)

Actually, saying “not everything will go as planned” is an understatement. In my experience, almost nothing goes as planned. When plan A fails be ready with plan B, C and so on. With a little creativity and endurance, most outcomes end up better than the original plan.

“V” IS FOR “VALUE LIVING “

The will to live is key to survival in a combat situation. “Stubbornness, a refusal to give into problems and obstacles that face you, will give you the mental and physical strength to endure (US Army, 1-9).”

The will to contribute and succeed is equally important in the modern information technology arena. There are (and always will be) problems and obstacles to face. It is your data warehousing team’s ability to overcome adversity that will enable you to succeed and excel.

“A” IS FOR “ACT LIKE THE NATIVES”

“By studying the people, you will learn to respect them, you can often make valuable friends, and, most important, you can learn how to adapt to their environment and increase your chances of survival (US Army, 1-9).”

Often, the importance of people skills and relationships is understated in materials presented about data warehousing. The fact is data warehousing requires cooperation and support between diverse and varied systems, platforms, departments and organizations. And behind every application, database and business need, there is a person or group of people with individual expertise, needs and concerns.

Looking at issues from others’ perspectives and acknowledging their objectives, issues and constraints in the context of your data warehousing initiatives will go a long way in establishing long lasting relationships which may prove invaluable when you need assistance in areas beyond your scope or control.

“L” IS FOR “LIVE BY YOUR WITS, BUT FOR NOW”

Without basic training, your chances for survival and evasive

maneuvers are slim. The time to learn is now. "How you decide to equip yourself prior to deployment will impact on whether or not you survive (US Army, 1-9)." You need to know about the environment where you are going and to practice basic skills geared toward that environment. (US Army, 1-9)

"Practice basic survival skills during all training programs and exercises. Survival training reduces fear of the unknown and gives you self-confidence. It teaches you to *live by your wits*. (US Army, 1-10)."

THE IMPORTANCE OF PLANNING

"Survival planning is being prepared (US Army, 2-1)." Paying attention to small details during preparations and planning is very important. Equally important is "preparing and carrying a survival kit (US Army, 1-10)".

In the data warehousing experience using the SAS® System, the "survival kit" equates to the SAS tools you plan to implement and use for your data warehousing efforts. "The key to the things you will need in your survival kit is the environment. The key to how much you put in your survival kit and where you carry it is your mode of travel and your unit's organic equipment (US Army, 2-3)."

Your specific configuration need not be elaborate. "Select items you can use for more than one thing. If you have two items that serve the same function, pick the one that has dual functions. Do not duplicate items, as this will increase the size and weight of your kit (US Army, 2-3)."

Speak to your SAS Account Representative and Systems Engineer about the values and uses of all SAS products available to your organization. Integrate existing tools into your development plans whenever possible.

CONCLUSION

SAS Institute Inc. and the SAS® System provide software solutions to meet today's business and technology needs. Every data-warehousing project presents unique questions, decisions, and situations requiring customized solutions. Proper planning, attitudes and actions during your data warehouse journey will enable success and provide your clients and company with lasting solutions for the new millennium.

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