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Abstract

The problem that was selected by the Crime Analysis Unit (CAU) of the Tempe Police Department was to improve what we provide and how we distribute information to the public and other outside entities. The task of making information available to the public has historically been difficult for any police department. Not only has it been difficult providing enough information, but the quality and time it takes to distribute the information have also been difficult.

The CAU chose to use the Internet as a response to this problem. Having a crime analysis web page would allow the CAU to provide much more information to the public and to increase the number and types of people who can access this information. The city had already instituted a city web page and encouraged departments to participate. Even though the catalyst for this problem-solving effort was providing information to citizens, those who would also benefit from this endeavor are business owners, apartment managers, mobile home managers, neighborhood groups, crime analysts, and police personnel. With an increase of potential customers, the both the quantity and quality of the information also needed to be improved. Additional reports, charts, graphs, maps, definitions, and articles were included on the web page, hopefully to anticipate most types of requests from the numerous customers.

The crime analysts developed and currently maintain their web page, and it is seen as a warehouse of crime and calls for service statistical information. The page is

considered a success by the CAU, the department, and the city as a whole. Both quantitative and qualitative measures have shown that many people use the page and are impressed by both its content and format. Fortunately, the technology is always improving which makes it necessary for the CAU web page to be constantly evaluated and improved. Improvements in the near future include displaying tactical crime trends and providing a "most frequently asked questions" section of the page.

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Scanning

One part of a police department's role in society is to provide crime and criminal activity information to the citizens. Since the 1960s, the Tempe Police Department has provided the FBI with its Part I crime information that is published and distributed nationally. However, these are only aggregate numbers of crime in Tempe. They do not consider geographical and temporal factors, or types of crime, and certainly do not provide information about citizen calls for service. Because of this, the Tempe Police Department, as well as most police departments, have one or two people who are responsible for distributing information other than Part I crime totals to the public.

Since 1989, the Crime Analysis Unit (CAU) of the Tempe Police Department has been responsible for preparing and distributing crime, calls for service, and other types of police information. For a number of years, the CAU has provided the public with general information as well as thematic maps that shade the city according to crime and calls for service. Citizens, or anyone for that matter, would call the police department and a member of the unit would mail or fax copies of the reports or a map. They could also pick up copies at the police station.

This is how most public requests were handled. However, because of the limited information and the difficulty of distribution, citizens either had to wait a significant amount of time to obtain information or submitted additional requests. Thus, the CAU decided to address the problem of providing more information and distributing that information in a more accessible, efficient way.

Analysis

In the analysis process, problems with both the method of distribution and the quality and quantity of information itself were identified. The information was not easily accessible. Citizens were transferred numerous times to the CAU only to be told they had to wait for a mailing or come into the police department. Likewise, the method of distribution was not efficient. The numerous copies that were distributed and thrown away each month wasting both paper and analysts' time. Analysts also spent a significant amount of time faxing and mailing, and citizens spent significant time driving to the police department or waiting to receive information.

The information itself was not timely. Even though the information was updated monthly, by the time it was received by the citizen a new report may already have been produced. In addition, both the quality and quantity of the information provided was lacking. When color-coded maps are copied and faxed, they become illegible. Furthermore, much of this information was not specific enough to be relevant. In other words, the information did not provide the locations, types of locations, or specific types of crimes or calls for service that would assist the citizen. For example, a general map of crime in the city may not help a new homeowner as much as a map that shades the city by residential burglaries. The information provided often did not satisfy the request at which time the citizen made specific request the analyst would complete. The information also did not satisfy requests from people or entities other than citizens, such as business owners, apartment managers, and law enforcement agencies.

This problem was chosen by the Crime Analysis Unit not only because of the significant time spent by crime analysts responding to these external requests, but also because of the availability of the Internet, a new and innovative technology. In fact, using the Internet to distribute information solves the problems listed previously. The Internet allows instantaneous updates. Thus, the information is timely, as no mailings or trips to the police station are needed. The Internet is accessible to millions of people. When the Internet first started, only certain people had access, but now it has become a major medium in society linking the world. Even those who can not afford a computer or the Internet service can get access through libraries and other non-profit resources.

The quality of the information presented on the Internet is a vast improvement over paper copies and/or faxes. Not only are all the reports in their original format, the Internet is in color and allows users to download the information directly onto their computers. Because of the ease of converting reports via computer to the Internet, the number of the reports made available to the public can increase because the time to replicate them has decreased. Instead of providing copies of a fifty page report, the Internet allows the user to view it and print it only when needed. Finally, if the quality and quantity of information are improved, people other than citizens moving into Tempe, such as apartment managers, business owners, crime analysts, and law enforcement personnel, would benefit from the information.

Since the Internet allowed the CAU to fix many of the methodological problems of providing information, the next step in the analysis process was to identify who the "customers" of the information were; that is, who would use the web page. Even though the initial catalyst for the project was serving citizens, there are many more people who

could use the information. The following is a list of the potential customers of a crime analysis web page:

- Citizens moving into Tempe.
- Citizens buying a house in Tempe.
- Neighborhood groups and watches, homeowners' associations.
- Apartment and mobile home community managers.
- Realtors and business owners.
- Law enforcement agencies and municipalities.
- Students.
- Crime analysts.
- Media.
- Internal police personnel.

Response

The CAU then chose to develop its own crime analysis web page as the response to the problem of providing and distributing information to the public. The police department already had its own web page, but the CAU decided to create one specific to crime analysis. One reason was that it would be a general warehouse of the crime and calls for service information. Another reason was to provide information specific to crime analysis and distinguish it from general police information.

A disadvantage of developing a crime analysis web page was that the responsibility for development and maintenance lay only with the two crime analysts. Another disadvantage of using the Internet, as noted above, is that not everyone has access to it. Thus, the CAU invested in a bulletin board for the police station front lobby and still provides selected reports and maps to the lobby desk for citizens who walk into the station. However, our experience has been that most people either have the Internet themselves or have access to it.

The next step in the response was to determine what information would be included on the page and how it would be presented. The following paragraphs list the type of information that would be relevant to the customers identified in the analysis process.

Citizens moving into Tempe. Citizens moving into Tempe are by far the most frequent requesters of information from the CAU. Even though the information sought by these citizens is usually minimal, "I just want to know if it's a safe area," the number of these requests is large. We do not give our "opinion" of areas of the city and have developed a monthly map that thematically shades the city by Part I crime. We determined that these citizens could also use demographics of Tempe; thematic maps of calls for service; specific information on crimes and calls for service such as burglary and loud noise/music/party calls; and apartment community, mobile home community, and school comparisons.

The apartment community bulletin was developed to compare apartment communities using a rate. The bulletin lists, for each community, the total number of either calls for service or crime, the number of units at the community, and the ratio of calls for service or crime per unit. This ratio information provides comparisons of both large and small communities on an equal basis. Of course, a large apartment community ~~should have more crime or calls for service than a small community;~~ however, it may not necessarily have a large call or crime per unit ratio. In fact, most of the higher ranking communities have 100 or fewer units which means that they have proportionately more activity. There are currently 166 apartment communities in the bulletin (only those with twenty units or more). Because half of Tempe's residents live in rental property and

many of these apartments house Arizona State University students, this information is used frequently.

Citizens buying a house in Tempe. These citizens could also use the more specific thematic maps and information about crimes and calls for service such as burglary and burglary alarms. Similar to above, demographic information and information about schools would also be valuable.

Neighborhood groups and watches, homeowners' associations. These types of groups typically are interested in the activity in their immediate neighborhood, and how they may compare to other areas of the city. Again, the various specific thematic maps would satisfy these requests as would the specific beat and census tract information that breaks out the city in slightly larger than neighborhood categories.

Apartment and mobile home community managers. As part of our department's Crime Free Multi-Housing Program, it makes a commitment to provide apartment and mobile home community managers with information about their properties. Thus, the apartment community and mobile home community bulletins would serve not only to inform citizens about moving into a property, but also would inform the managers and owners how they compare within the city. The healthy competition this bulletin would produce among the managers could encourage them to enroll in our Crime Free Program and/or to improve their properties to decrease their rankings. The thematic maps also show them how the areas surrounding their properties measure up.

Realtors and business owners. Often, these groups request specific studies to be conducted on their properties. The CAU does honor those requests, but many times the maps and general information we produce can answer their questions.

Law enforcement agencies and municipalities. The CAU is repeatedly being solicited for historical crime and calls for service information by other Tempe city departments, other law enforcement agencies, and other cities. Many times these requests are research for grants in which general information is necessary. Thus, historical UCR and calls for service information is important to these customers. This type of customer also frequently requests domestic violence information.

Students and Crime Analysts. For those citizens, students, and fellow professionals interested in crime analysis, information relating directly to the discipline would be relevant, for example definitions of terms and articles written about crime analysis.

Media. Because the media look for information of great variety, any and all additional information could be useful. For example, the previous Media Relations Officer asked for a study on parks in Tempe because he was receiving a large amount of requests for park comparison information. Instead of doing the requests on an ad hoc basis, a yearly park bulletin could be used at the leisure of members of the media.

Internal personnel. Although we provide members of our police department with additional reports and individual requests, the Internet would allow them to access information without having to contact a crime analyst. The historical information could be used for long term problem solving and the specific beat information could be used for community meetings, not only for police officers, but also for crime prevention officers. The monthly crime and calls for service maps, the monthly apartment and mobile home community bulletins, and the monthly school bulletin allow the officers to pinpoint and track problem locations month to month. Besides downloading selected information

from the web page, an officer would only have to memorize the web address to give out at a community meeting. This would eliminate the need for preparing, copying, and distributing information at the meeting. These community groups could then take responsibility for the information and would not have to wait for a police department representative to provide it to them.

Considering all of these factors, the following is an outline of the information the CAU has included on the web site as of May 1998:

- I. Rate Your Risk-Crime Surveys
- II. Definitions
- III. The Tempe Police Department's Mission Statement
- IV. Factors Of Crime Statistics
- V. Definition Of Crime Analysis
- VI. Types Of Crime Analysis
- VII. Interesting Statistics
- Vm. Demographics
 - A. Age
 - B. Race
 - C. Educational Attainment
 - D. Land Use
 - E. Residential Composition
 - F. Population
- IX. Reports And Bulletins
 - A. Crime Hotspot Map
 - B. Calls For Service Hotspot Map
 - C. Apartment Community Report
 - D. Annual Apartment Community Report
 - E. Mobile Home Community Monthly Report
 - F. Monthly School Report
 - G. Quarterly Accident Report
 - K. Report On Policing In Tempe
 1. Calls for Service
 - General Calls For Service Information
 - Loud Music/Noise/Party Calls For Service

2. Part I Crime
 - Crime In Tempe
 - Crime Comparisons
 - Robbery Information
 - Residential And Nonresidential Burglary Information
 - Domestic Violence
 3. Unique To Tempe
 - Superbowl 1996
 - Apartment Communities
 - High Schools
 - Major Night Clubs/Bars
 - Accidents
 4. Citizen Survey Results
 - Demographics
 - Victimization
 - Fear Of Crime/Safety Concerns
 - Quality Of Life
 - Community Involvement
 - Satisfaction With Tempe Police
 - Community Policing
- I. Report On Policing In Tempe
1. Definitions: Calls For Service And Crime
 2. Calls For Service
 - General Calls For Service Information
 - Burglary Alarm Calls
 - Traffic Accident Calls
 - Suspicious Activity And Check Welfare Calls
 3. Part I Crime
 - Part I Crime hi Tempe
 - Part I Crime Comparison
 - Theft From Vehicle
 - Residential And Nonresidential Burglary
 - Motor Vehicle Theft
 4. Domestic Violence
 - Domestic Violence Criteria
 - Domestic Violence Comparison

 - Domestic Violence 1997

5. Unique To Tempe
 - Apartment Communities
 - Mobile Home Communities
 - Parks
 - High Schools
 - Middle And Elementary Schools
 - Major or Night Clubs/Bars
 - Accidents
6. Beat Information
 - Beat Map
 - General Beat Information
 - Specific Beat Information

X. Articles

- A. Using Surveys In Law Enforcement
- B. Crime Analysis Today: What Is A Crime Analyst?
- C. Credits And Other Related Sites

Assessment

The results of instituting a crime analysis web page are measured two ways, quantitatively and qualitatively. The web statistics show that from April 1997, when it developed, to May 1998, it has had approximately 12,000 hits. Since the city web page has been producing monthly statistics, the crime analysis web page has been in the top 25 most visited pages (out of over 500 city pages). The following chart shows the month, rank, number of hits, total for all the city pages, and percentage the CAU total is of the city's total by month since October 1997.

Month	Rank	Number of Hits	Total for the City	Percent
Oct-97	11	1,193	205,862	0.58%
Nov-97	16	736	113,646	0.65%
Dec-97	23	744	162,093	0.46%
Jan-98	21	679	124,224	0.55%
Feb-98	18	725	105,159	0.69%
Mar-98	20	871	123,262	0.71%
Apr-98	13	989	126,998	0.78%
May-98	14	880	111,268	0.79%

Unfortunately, statistics are not available for the first six months the page was on the Internet. The chart shows that the CAU page averages about 852 hits a month or 28 hits per day. In addition, the CAU percentage has steadily increased.

The qualitative information includes both time saved and individual responses to the web page. Because "time saved" is not measurable, how much time the web page has saved the crime analysts is unknown, and the results are primarily anecdotal. The crime analysts no longer have to mail or fax information to people, and most of the time simply the address of the web page is the only information given. The web page has also saved time making copies of the additional reports for external customers as well as has answered requests from internal customers.

The following are direct quotes that have been received by the CAU on the "feedback" section of the Internet page. The respondents' names have been removed. They include responses from citizens, students, professors, and law enforcement personnel all of whom are those who the page was designed to target:

I am planning to move to Tempe in June. I am a single mother who was worried about the move, but I feel so much better now. I printed out all of the statistical stuff that I thought I would need and now I can sit down with my Tempe map and find my daughter and I a safe place to live. Thanks to you (and everyone else involved) for setting up such a helpful site.

Great info on this site, very informative.

Hi, I'm teaching crime analysis at CA State University Fullerton love your web page. Turned it into overhead for class presentation of crime analysis products. Keep up the good work.

I greatly enjoyed your web page and have learned quite a bit about the community I have moved to. After having lived in Tucson for five years, this is a new adventure for me. I must say that I, unknowingly, moved into a higher crime area (Spence & Terrace) and have been pleased to see an increase in drive bys with

squad cars. I hope to continue living in Tempe for many years to come as it is conducive to learning and encourages community involvement.

Thank you for this web site. My son is preparing to move to the area and this was very informative and gave us a head start on locating him a safe environment to begin his adult [life].

Hello, I live in Edmonton, Canada and have been thinking of moving to Tempe or Phoenix area. These stats have been very helpful and I would like to know if there are any stats like this for Phoenix...

I like the idea of the map with number of crimes in the area. The map would be easier to read and find a specific location if the N-S streets were marked better.

EXCELLENT!!! It is VERY thorough and informative. Thank you very much!! Why doesn't every city in the valley have a page like yours?

I just wanted to congratulate you folks for your CAU page. Great information, great graphics, and wonderful demonstration of commitment to public information...

Hello, I am a superintendent with the New South Wales Police in Australia.. I am very impressed with your web site, its comprehensiveness and the depth of information available.

Thanks, I really appreciate the info.. I'm somewhat familiar with MapInfo and am just trying to get a feel for what we folks are doing...

Just spending a raining Florida afternoon surfing and happened across your site. What a wonderful idea and clear, information implementation. I think I'll send the URL to our Police Chief.

Information was very helpful for your area, but need additional help if available. I'm putting a prevention program and book together dealing with assault, but have not been able to locate had crime statistics together on this subject that would mainly apply to Native American Reservation areas. Can you help or suggest possible resources.

.. I am interested in your web page in how you thought of the different types of categories in which you show data. Is there a certain type of software in which the data was extracted from or is this your own creation. I have just been transferred to the Intel job and have a couple of crime analysts who work with me, I believe you are a step above most departments.

Very interesting page.. I'm particularly interested in the method you use to create your mapping as I'd like to use something similar on mine...

I began checking the web tonight and was reading your department's pages. I'd like to know if you or somebody in your unit could head me in the right direction with regards to some basic software for crime analysis and mapping. I'd also be interested in what minimum requirements we should ask for when we begin searching for a civilian for the P/T crime analyst position.

First of all I must congratulate you on a well designed and very informative homepage. I'm an Inspector in the Malta Police Force on the island of Malta (which is a small island in the Mediterranean). We are currently reviewing our policies and work procedures. One of the tasks which have been assigned to meet is to investigate into the possibility of setting up a crime analysis unit. I was wondering whether you could provide us with some information and assistance in setting up this unit...

I am currently working on some crime analysis using Tempe, AZ. I have picked up the CFS for apartment complexes and am trying to find relations between CFS and different demographics,. If there is anyway that you could help me locate more specific demographics I would greatly appreciate it.

I am a crime analyst with the Gainesville Police Department in Gainesville, Florida. WOW what a site.. you must have a small army in order to put together such a great web site.. I would really like to talk to you via land-line...

I saw your web page and thought it was great! Good to see some department having a web site devoted to the crime analysis unit.. Keep up the good work!

Good job on your crime analysis site, very informative, timely and meaningful.. I was wondering if you have any data on the following: have you compared apartment CPU to single family dwelling CPU in your city?...

In sum, the CAU, as well as the entire department, consider the crime analysis web page a success. The page is being used heavily not only by the public, but also by other agencies, municipalities, and members of our own police department. The CAU no longer needs to mail or even fax out information on a regular basis and providing information is as simple as repeating the web address.

The assessment of the web page is ongoing as is the development of the page. In order to make the page more effective, we are looking at putting selected crime trends and patterns on the page as well as including a "most commonly asked questions" section. These new sections are based on analysis of other web pages as well as feedback from numerous groups.

Agency and Other Information

The police department also has its own web page. However, the crime analysis web page is maintained separately. The web page was developed in response to the demand on the CAU to provide timely information on calls for service and crime and was approved by our direct supervisor. Interestingly enough, now that the page is done and heavily used, the entire department utilizes the page.

The general resource of this response was basically the crime analysts' time. The Internet was already made available by the city who encouraged departments to use it. In essence, the crime analysts contributed the time and technical expertise to develop and maintain the page.

Attachments

Because of the unique nature of the response of this project, there are no attachments. However, included here is the web address of the crime analysis page. It is assumed that the evaluators have access to the Internet and will evaluate the page as it stands on the Internet since this is the only way to truly judge the value and impact of the page. Making a copy of the 150+ pages would not be a realistic attachment. The Crime Analysis Unit's web page address: **www.tempe.gov/cau**.