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Introduction
The 2015/2016 teleworkSD pilot project provided free consulting services and resources to employers who wanted to explore and implement telework programs in San Diego County. The teleworkSD pilot included four employers of varying sizes from different industries: San Diego Futures Foundation, Sharp HealthCare, CH2M Hill, and Katz & Associates.

The following assistance/services were included in the pilot:

- One-on-one consultation from initiation to implementation
- Assessment of steps necessary for customized program delivery
- Assistance to overcome any telework program concerns
- Development of custom presentations and marketing materials to target upper and middle management
- Program design and implementation
- Remote working technology consultation
- Development of policies, procedures, and agreements
- Sample materials, case studies, and implementation kits
- Manager and employee training
- Evaluation guidelines and strategies

The following report reviews the combined results of teleworkSD’s pilot programs for the four participating employers. Each pilot participant project was implemented for a minimum of six months and the findings are based on surveys completed by 84 teleworkers and 25 managers of teleworkers (telemanagers).

About the Employers
San Diego Futures Foundation’s (SDFF) mission is to improve lives in San Diego County by making information technology available to underserved populations by providing technology equipment, training, support, IT outsourcing, and digital media services to nonprofit organizations, disadvantaged small businesses, low-income households, people with disabilities, and seniors. SDFF had about 25 employees at the time of the pilot program.

Sharp HealthCare (Sharp) is a not-for-profit integrated regional health care delivery system located in San Diego. Sharp includes four acute-care hospitals, three specialty hospitals, two affiliated medical groups and a health plan. Sharp operates 2,100 beds, has approximately 2,600 physicians on medical staffs, more than 1,000 physicians in affiliated medical groups, and had more than 16,000 total employees at the time of the pilot program.

CH2M Hill is an American engineering company that provides engineering, construction, operations, and related technical services to public and private clients worldwide. CH2M Hill works with over 5,000 clients from more than 50 countries and, globally, has 25,000 employees. The San Diego CH2M Hill office had about 70 employees at the time of the pilot program.

Katz & Associates is a public affairs consulting organization that develops and implements specialized programs for strategic communications, public involvement and community relations for projects spanning local to national scales. Katz & Associates has offices in San Francisco, Los Angeles, and San Diego, with 23 employees in the San Diego office at the time of the pilot program.
Combined Telework Survey Methodology

As part of the final analysis of study results, statistical analyses were performed to determine if responses were comparable between pilot employers. This analysis was included to ensure that a single group’s attitudes did not overpower the composite study results.

A single factor ANOVA test was performed on each question (except travel impact questions) to confirm that no statistically significant differences existed between the employers. Travel impact data was not included in the ANOVA because the survey data for these questions were not compatible with this type of testing. In all tested instances, the resulting statistics indicated that the means of the groups were equal. This conclusion was based on the F and F Critical values (in all cases F was smaller than F critical) as well as the p-values (in all cases the p-value was greater than the significance level of 0.05). Once it was confirmed that no statistically significant differences existed between groups of survey questions, group responses were combined and summarized by question to obtain summary results for the pilot. A comparison of the pre and post surveys is included in Appendix A. Travel impact results were not combined, but rather, are presented side-by-side in the following sections for comparison purposes.

Pilot Composition

Of the total survey respondents, 36% are in the professional category, 27% are in the technical/skilled category, 14% are in clerical/support, 9% are in managerial, 9% are in director/executive, and 5% are in “other” categories (claims management, registered nurse, analyst, etc.).

- On average, the teleworkers have been teleworking for 4.3 months. The largest proportion teleworked five days per week (30%) during the pilot, with the second largest (29%) teleworking one day per week. For the remainder, 14% teleworked four days, 11% teleworked two days, 8% teleworked three days, 5% teleworked only for special occasions/emergencies, 2% teleworked one or two days per month, and 1% teleworked less than one day per month.

- The top three types of work performed by teleworkers when teleworking are data management (54%), writing/editing reports (49%), word processing (48%), administration/coordination (48%), and conference calls (48%).

Job Descriptions

![Figure 1: Pilot Participant Job Description]
Travel Impacts by Pilot Employer

Travel Mode Impacts: San Diego Futures Foundation

- To assess the impact on teleworking on employees’ travel behavior, the teleworkers were asked to report their weekly trips to the office on a daily basis. Prior to teleworking 93% of the trips generated by teleworkers were made by driving alone, 5% by bicycle, and 2% by walking.

- During the telework program, similarly employees’ were asked to report on their travel behavior based on a five day calendar. Using this information, 70% of the trips were made by driving alone, 10% by carpooling, and 20% were eliminated through teleworking.

Travel Mode Impacts: CH2M Hill

- To assess the impact of teleworking on employees’ travel behavior, the teleworkers were asked to report their weekly trips to the office on a daily basis before the teleworkSD pilot program. Using this information, 64% of the trips generated by teleworkers were made by driving alone, 16% by bus, 11% by teleworking, and 9% by train.

- Post-survey data regarding travel behavior during the teleworkSD pilot program revealed that 48% of the trips were made by driving alone, 26% were eliminated through teleworking, 17% by bus, 7% by train, and 2% by walking.
Travel Mode Impacts: Sharp HealthCare

- To assess the impact of teleworking on employees’ travel behavior, the teleworkers were asked to report the mode of their weekly trips to the office on a daily basis before they started teleworking. Using this information, 89% of the trips were made by driving alone, 8% by teleworking, and 3% by walking.

- During the telework program, 24% of the trips were made by driving alone and 76% were eliminated through teleworking.

Travel Mode Impacts: Katz & Associates

- To assess the impact on teleworking on employees’ travel behavior, the teleworkers were asked to report their weekly trips to the office on a daily basis. Using this information, 98% of the trips generated by teleworkers prior to the pilot were made by driving alone.

- During the telework program, 76% of the trips were made by driving alone, 17% were eliminated through teleworking, and 7% by carpooling.

*Figure 4: Sharp Mode Split*  
*Figure 5: Katz & Associates Mode Split*
Travel Impacts for Combined Results

The following statistics represent savings in terms of employees teleworking their post-survey reported number of days per week (ranging from one to five). Please note that these totals are based on 77 teleworkers (five did not answer these survey questions and seven teleworked only intermittently, so were not calculated).

- On average, teleworkers spend 33 minutes to get to their office from home and 36 minutes to go back home from the office, thus saving 69 minutes of commute time when teleworking.

- On average, teleworkers travel 16 miles one way from home to office, thus saving 32 miles round trip when teleworking.

- An estimated 13,027 commute hours are saved annually by the 77 responding teleworkers in the program (based on 69 minutes per telework occasion multiplied by number of days teleworked multiplied by number of teleworkers).

- Based on the survey responses, 22,656 trips are eliminated annually by the 77 responding teleworkers in the program (based on two trips saved per telework occasion multiplied by number of days teleworked in a 48 week work year).

- Based on the survey responses, 362,496 vehicle miles are reduced annually by the 77 responding teleworkers in the program (based on number of trips above multiplied by 16 miles for each trip) which translates into 170 tons less carbon dioxide released into the air.

Prior Experience with Telework for Telemanagers

- On average, the telemanagers supervise 16 employees; 92% of the telemanagers allowed some of their staff to telework, with an average of three who were allowed to telework during the pilot periods.

- 72% of the telemanagers have teleworked before.

- 32% of the telemanagers have supervised teleworkers before.

<table>
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<tr>
<th>Top Three Reasons for Program Implementation</th>
<th>Improve Morale</th>
<th>Improve Recruitment/Retention</th>
<th>Improve Productivity</th>
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<tbody>
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<td>63%</td>
<td>52%</td>
<td>64%</td>
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<th>Top Three Company Objectives for Implementing Teleworking According to Telemanagers</th>
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<th>Improve Recruitment/Retention</th>
<th>Improve Productivity</th>
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<td>56%</td>
<td>52%</td>
<td>44%</td>
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<th>Improve Recruitment/Retention</th>
<th>Improve Productivity</th>
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<tr>
<td></td>
<td>56%</td>
<td>44%</td>
<td>48%</td>
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</tbody>
</table>

Table 1: Employer Goals and Objectives Desired and Achieved
Attitudinal Questions

In the next seven categories, respondents were asked to rate their answers on a scale of one to five, five meaning “strongly agree” and one meaning “strongly disagree.” In these categories, the fours and fives are consolidated and rated as “agree,” threes are rated as “neutral,” and ones and twos are consolidated as “disagree.”

Productivity

Survey results revealed the following regarding productivity:

- 85% of telemanagers did not think that staff had problems getting work completed on time while teleworking, while 10% were neutral, and 5% thought that employees had problems getting work completed on time.
- 98% of teleworkers did not have problems getting work done while teleworking.
- 55% of telemanagers thought that the quality of their staff’s work improved, and 35% were neutral, and 10% thought that the quality of work declined.
- 62% of teleworkers thought that the quality of work improved when teleworking, while 33% were neutral, and 5% thought that the quality of their work had declined.
- 67% of the teleworkers thought their productivity had improved, 28% thought it stayed the same, and 5% were not sure. Of the teleworkers who responded, they thought their productivity had increased on average by 31%.
- 70% of the telemanagers reported that productivity had improved, 15% thought it remained the same, and 15% were not sure. Of the telemanagers who responded, they thought that their team’s productivity had improved on average by 21% as a result of teleworking.
- When asked about the impact of teleworking on productivity of other teleworkers at the organization during the pilot program (excluding self), 58% of the respondents thought productivity increased, 22% were unsure, 15% thought it had remained the same, and 5% thought that productivity had decreased.

In summary, survey respondents rated productivity gains positively. In particular, the average productivity increase of 21% mentioned by the telemanagers and the increase of 31% mentioned by the teleworkers, respectively, is exceptionally high.

For the managers and employees that thought the quality, timeliness and productivity of the work had declined, the question is “why did they stay in the pilot?” Typically if there are issues, those employees ability to telework is mutually terminated.
Management Issues

Survey results revealed the following regarding telework and management:

- 95% of the telemanagers have a positive attitude toward teleworking, and 5% were neutral.

- 81% of teleworkers thought their supervisor has a positive attitude towards teleworking, and 9% were neutral, and 10% thought that their supervisor's attitude was not positive.

- 75% of telemanagers were not concerned about a decrease in productivity while staff were teleworking, 15% were neutral, and 10% were concerned.

- 75% of telemanagers spent less time supervising teleworkers, and 25% spent the same amount (the survey says neutral).

- 90% of telemanagers felt that teleworking had no negative impact on teleworkers being promoted, and 10% were neutral.

- 67% of teleworkers felt that teleworking did not have a negative impact on being promoted, 28% were neutral, and 5% thought that it would have an impact on being promoted.

Once again, the managers and teleworkers are not having problems with teleworking impacting management issues such as attitudes toward teleworking and the ability to be promoted.

![Figure 7: Input on Potential Management Issues](image_url)
Competitive Edge

Survey results revealed the following regarding telework and the employer's perceived competitive edge:

- 90% of telemanagers believe that teleworking is good for the organization, and 10% were neutral.
- 90% of teleworkers believe that teleworking is good for the organization, 3% are neutral, and 7% do not think that it's good for the organization.
- 60% of telemanagers thought that allowing staff to telework gave them a competitive edge over their competition, while 40% were neutral.
- 68% of teleworkers believe that allowing teleworking gives the organization a competitive edge, while 27% were neutral, and 5% thought that teleworking does not impact the organization's competitive edge.

- 65% of telemanagers thought that employees who telework are less likely to look for another job, 25% were neutral, and 10% did not think that teleworking reduced the likelihood of looking for another job.
- 77% of teleworkers reported they are less likely to look for another job as a result of teleworking, 21% were neutral, and 2% did not think that teleworking the likelihood of looking for another job.

Managers overwhelming thought that teleworking is good for their organizations, with a majority also agreeing that it provides a competitive edge and improves retention. Teleworkers were also positive in regards to all of the factors mentioned above, but agree to an even higher degree than their managers.

![Competitive Edge Diagram]

*Figure 8: Pilot Participant Input on Competitive Edge*
Communication Issues

Survey results revealed the following regarding telework and communication:

- **80%** of telemanagers reported they were able to maintain adequate, clear communication when staff were teleworking, while **15%** were neutral, and **5%** thought it was a problem.

- **89%** of teleworkers reported they were able to maintain adequate, clear communication with their supervisor was a problem while teleworking, while **2%** were neutral, and **9%** thought it was a problem.

- **60%** of telemanagers thought that non-teleworking staff had no problems with those who teleworked, while **25%** were neutral, and **15%** thought that they did.

- **59%** of teleworkers thought their non-teleworking co-workers had no problems with those who teleworked, while **32%** were neutral, and **9%** thought that they did.

- **60%** of telemanagers thought it was not difficult to hold group meetings as a result of teleworking staff, **15%** were neutral, and **25%** thought that it was difficult.

- **67%** of teleworkers thought it was not difficult to hold group meetings because of their schedules, **16%** were neutral, and **17%** thought it was difficult.

- **75%** of telemanagers felt they were aware of what their staff was doing while they teleworked, **15%** were neutral, and **10%** were not aware.

The majority of the respondents did not have any communication problems, although, given that **25%** of telemanagers believed it was difficult to hold group meetings, there is likely room for improvement. Investments in meeting and communication tools can greatly alleviate these issues. Training everyone on the use of these tools is absolutely necessary.

![Communication](image)

**Figure 9: Pilot Participant Input on Communications**
Morale
Survey results revealed the following regarding telework and morale:

- 90% of telemanagers thought that teleworkers’ morale had improved, 10% were neutral.
- 84% of teleworkers reported that their morale had improved as a result of teleworking, and 11% were neutral, and 5% thought that morale had not improved.

Future of Teleworking
Survey results revealed the following regarding respondents’ views on the future of teleworking at their place of employment:

- When asked if they would allow additional employees to telework, 60% of the telemanagers responded that they would allow additional employees to telework, 10% responded that they wouldn’t, and 30% responded that all eligible employees are already allowed to telework.
- On average, telemanagers plan to allow one additional employee to telework.

Items That Would Assist Telemanagers in Offering Telework to Employees
- Regular assessment of teleworking program results (48%)
- Assurance of multiple lines of communication with teleworkers (36%)
- Completion of time management training by teleworkers (24%)
- Improved in-office meeting scheduling procedures software (16%)

Items That Would Assist Employees in Teleworking
- Improved network speeds (89%)
- Training on the use of technology (24%)
- Teleworker time management training (12%)

Work/Life Balance
Survey results revealed the following regarding telework and work/life balance:

- 70% of teleworkers thought that their families were less stressed as a result of their teleworking, 22% were neutral, and 8% did not believe that their families were less stressed.
Recommendations for Telework Employers

Based on the positive results from the analysis of the four companies, it appears that formal telework programs are more successful when they:

- Include a steering committee
- Have fully developed policies
- Have clear selection criteria
- Provide clear IT instructions and training
- Provide focus groups for troubleshooting and training

The one-on-one assistance provided by the telework demonstration project improved the employers’ confidence that a new program, or modified existing program, would be successful.

Based on discussions with the employers’ telework coordinators, it is important for the employers to know the impacts of teleworking on their internal organizations. Input from several of the telework coordinators stressed:

- The importance of investing in communications technologies and training of employees and supervisors in the use of these technologies.
- The importance of adequate home internet speeds and employers providing guidance on their minimum acceptable speed.

The consultant-led training sessions for the managers and teleworkers were very well received and ensured that both groups were on the same page in terms of parameters and policies, and that both parties were prepared for the onset of teleworking.

Recommendations for SANDAG

The telework demonstration project was designed to develop and implement telework pilot programs for 10 employers. Resources were developed and placed on the teleworkSD website to assist in this process. A list of “interested” employers provided at the beginning of the telework demonstration project proved to be too inaccurate and/or out of date (2013) to be beneficial—none of the employers who engaged in the project came from this original list. The consultant team and SANDAG’s Account Executives (AEs) supplemented this list and generated the leads that eventually became the pilot program participants.

With the included recruitment efforts, the telework demonstration project resulted in four employers participating in the full pilot and three additional organizations beginning the pilot program, but dropping out for varying reasons.

Looking forward to the potential for SANDAG to provide on-going telework assistance to its member agencies and regional employers, it should continue to utilize its AEs at the forefront of marketing and recruitment. Additional resources may be required to effectively market telework as a driving alternative, since this specialized service has been shown to be attractive as a workplace productivity solution by C-level employees rather than a TDM solution.

With the completion of this first demonstration project, promotional telework materials can now include the results and testimonials of the local pilot employers to attract additional interest. Further, the results of the pilot provide current, local examples of the impacts of teleworking on employee retention, productivity, and morale. This database could be translated into a presentation that can be used for recruitment and could also be used to create an “impact calculator” for employers to measure (potential) cost savings, CO2 savings, and VMT reductions.

Lastly, it is recommended that SANDAG shift from providing a standardized “start-to-finish” program to on-going customized support packages. For example, an employer may only need help with policy development and the training of the teleworkers/managers. SANDAG could also internally develop, or contract, the development of “toolkits” using web-based templates and documents for employers. These tools would allow employers to self-train/self-administer aspects of telework, reducing the need for in-person assistance. Ultimately, SANDAG should position itself to provide employers with the targeted telework assistance they need most.
Appendix A:
Comparison of Pre- and Post-Program Survey Attitudinal Questions
The following charts represent a comparative analysis of pre and post survey results.

*Improvements in productivity could only be assessed in the post-survey, hence the zero percent response for the pre-survey.
Teleworker Management Issues

Telemanager's positive attitude | No impact on promotability
---|---
Pre Survey | Post Survey

Telemanager Management Issues

Telemanager's positive attitude | No impact on promotability
---|---
Pre Survey | Post Survey
Teleworking is good for the organization. Teleworking gives the organization a competitive edge. Less likely to look for another job.

Teleworker Competitive Edge

Telemanager Competitive Edge
**Teleworker Communications**

- No communication problems: Pre Survey (80%), Post Survey (90%)
- Co-workers do not have problems with teleworkers: Pre Survey (40%), Post Survey (50%)
- Difficult to hold group meetings: Pre Survey (10%), Post Survey (20%)

**Telemanager Communications**

- No communication problems: Pre Survey (80%), Post Survey (90%)
- Co-workers do not have problems with teleworkers: Pre Survey (40%), Post Survey (50%)
- Difficult to hold group meetings: Pre Survey (10%), Post Survey (20%)
Teleworker Morale

Telemanager Morale