

JESSE LASLOVICH
NICK MAZANEC
Office of the Commissioner of Securities
and Insurance, Montana State Auditor (CSI)
840 Helena Avenue
Helena, MT 59601
(406) 444-2040

Attorneys for the CSI

**BEFORE THE COMMISSIONER OF SECURITIES AND INSURANCE
MONTANA STATE AUDITOR**

)	Case No. INS-2012-238
IN THE MATTER OF THE CONVERSION)	
OF BLUE CROSS AND BLUE SHIELD OF)	NOTICE OF FILING OF DIRECT
MONTANA, INC., AND ALLIANCE WITH)	TESTIMONY OF TIMOTHY J.
HEALTH CARE SERVICE CORPORATION)	TARDIFF, PH. D.
)	
Applicants.)	
_____)	

The Office of the Commissioner of Securities and Insurance, Montana State Auditor, Provides Notice that on February 8, 2013, the Direct Testimony of Timothy J. Tardiff, Ph. D., Principal of Advanced Analytical Consulting Group, Inc. was filed. A copy of the email transmitting the press release is attached as Exhibit CSI-1.

DATED this 8th day of February, 2013.



NICK MAZANEC
Attorney

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing was served on the 8th

day of February, 2013, by US mail, first-class postage paid, to the following:

Jacqueline T. Lenmark, Esq.
Keller Reynolds, Drake,
Johnson & Gillespie, P.C.
50 South Last Chance Gulch, Suite 4
P.O. Box 598
Helena, MT 59624

Honorable W. William Leaphart (Ret.)
1772 University Street
Helena, MT 59601

Kelley Hubbard, Esq.
Montana Department of Justice
215 North Sanders, Third Floor
P.O. Box 201401
Helena, MT 59620-1401

Ms. Sybil Shults
Records Clerk
Office of the Commissioner of
Securities & Insurance
State Auditor's Office
840 Helena Avenue
Helena MT 59601



Office of the Commissioner of Securities and
Insurance, Montana State Auditor

**BEFORE THE COMMISSIONER OF SECURITIES AND INSURANCE
MONTANA STATE AUDITOR**

IN THE MATTER OF THE)
CONVERSION OF BLUE CROSS AND)
BLUE SHIELD OF MONTANA, INC.,)
AND ALLIANCE WITH HEALTH CARE)
SERVICE CORPORATION)

CASE NO: INS-2012-238

Applicants.)

DIRECT TESTIMONY OF

TIMOTHY J. TARDIFF, PH. D.

PRINCIPAL

ADVANCED ANALYTICAL CONSULTING GROUP, INC.

ON BEHALF OF

THE OFFICE OF THE COMMISSIONER OF SECURITIES AND INSURANCE

MONTANA STATE AUDITOR

February 12, 2013

Exhibit CSI-1

1 **I. IDENTIFICATION OF WITNESS**

2 Q. PLEASE STATE YOUR NAME, EMPLOYER, BUSINESS ADDRESS,
3 AND CURRENT POSITION.

4 A. My name is Timothy J. Tardiff. I am a Principal of Advanced Analytical
5 Consulting Group, Inc., also referred to as AACG. My office is located at 211
6 Congress Street, Boston, MA 02110.

7 Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATION,
8 QUALIFICATIONS, AND EXPERIENCE.

9 A. I have a B.S. in Mathematics from the California Institute of Technology,
10 and a Ph. D. in Social Sciences from the University of California, Irvine. I have
11 served as an assistant professor in the Department of Civil Engineering and
12 Division of Environmental Studies at the University of California, Davis. As a
13 consultant, I have specialized in the fields of regulated utilities and
14 telecommunications from the perspectives of market competition and economics.
15 From 1984 until 2006, I worked at NERA Economic Consulting (NERA). While
16 with NERA, I was a vice president in the telecommunications practice, focusing on
17 economic analysis of competition within the telecommunications industry.
18 Following my tenure at NERA, I was employed as a Managing Director at Huron
19 Consulting Group. I have also served as the Director of Marketing Research at

1 Charles River Associates, Inc. The attached Exhibit A is a copy of my curriculum
2 vitae which more fully details my education, experience, and qualifications.

3 Q. PLEASE DESCRIBE YOUR PAST EXPERIENCE TESTIFYING IN
4 FORMAL PROCEEDINGS.

5 A. I have testified in a substantial number of matters throughout my career. My
6 specific testimonial experience is set forth in Exhibit A. As that Exhibit makes
7 clear, essentially all my testimony has been on behalf of regulated entities or other
8 private parties. I have rarely, if ever, testified on behalf of the government
9 adversely to a private party. As that Exhibit also makes clear, I have principally
10 been involved in communications - and transportation - related matters.

11 Q. ARE YOU AWARE OF ANY PERSONAL OR PROFESSIONAL
12 CONFLICTS WHICH MIGHT PREVENT YOU FROM PROVIDING
13 UNBIASED TESTIMONY?

14 A. I am aware that Dr. Thomas McCarthy of NERA is testifying in this matter
15 on behalf of Blue Cross and Blue Shield of Montana, Inc. (BCBSMT) and Health
16 Care Service Corporation (HCSC). Dr. McCarthy worked at NERA during my
17 tenure there.

18 Q. ARE YOU AWARE OF ANY OTHER POTENTIAL CONFLICTS
19 INVOLVING YOU OR ANY OTHER MEMBER OF THE AACG TEAM?

1 A. Dr. Daniel Levy served as a member of the research team. I understand
2 Dr. Levy testified as an antitrust expert on behalf of HCSC in 2001 when HCSC
3 acquired New Mexico Blue Cross and Blue Shield, Inc.

4 **II. DEVELOPMENT OF EXPERT REPORT**

5 Q. PLEASE IDENTIFY THE AACG EMPLOYEES WHO WORKED ON
6 THIS MATTER.

7 A. My team consisted of four senior-level AACG employees: Dr. Levy, Dr.
8 Audrius Girnius, Karthik Padmanabhan, and myself. I participated as a senior
9 member of the AACG evaluation team.

10 Q. WHO RETAINED YOU IN THIS MATTER?

11 A. We were retained by the Office of the Commissioner of Securities and
12 Insurance, Montana State Auditor (CSI), to evaluate the proposed transaction
13 between HCSC and BCBSMT. (BCBSMT).

14 Q. WHAT WERE YOU ASKED TO EVALUATE?

15 A. The CSI asked us to assess the proposed transaction's impact on the affected
16 community and to determine if the transaction would raise any antitrust issues. I
17 am here today to provide my expert opinion on those topics.

18 Q. BRIEFLY DESCRIBE THE MATERIALS YOU EXAMINED IN
19 CONDUCTING YOUR ANALYSIS.

1 A. Much of the material came from HCSC and BCBSMT. We began with the
2 Application for Approval of Alliance, its supporting documents and the attached
3 expert reports. The data the insurers provided included but was not limited to
4 statutory and pro forma financial statements, enrollment and premium data,
5 BCBSMT employment data, and written responses to more detailed AACG
6 inquiries. Additionally, we purchased enrollment, premium, and utilization data
7 from the National Association of Insurance Commissioners. We also considered a
8 number of other data sources, including recently conducted surveys and analyses
9 of the Montana market. The materials are identified in greater detail in my expert
10 report.

11 Q. DID YOU RECEIVE ALL THE INFORMATION YOU NEEDED TO
12 CONDUCT YOUR ANALYSIS?

13 A. We received most of the information we requested. Some data we simply
14 couldn't locate. For example, we were unable to obtain data regarding specific
15 companies that serve Montana residents covered via self-insured employers, other
16 than those members that are insured through HCSC or BCBSMT.
17 We were also told that some of the information we requested from BCBSMT or
18 HCSC was not available. For example, we requested but did not receive historical
19 data regarding HCSC's pricing in other states where HCSC has conducted similar

1 transactions. Finally, there was information that we didn't request simply because
2 we didn't have the time to perform a more detailed analysis.

3 Q. PLEASE DESCRIBE THE TIMELINE OF AACG'S INVOLVEMENT IN
4 THIS MATTER.

5 A. AACG was retained in early December of 2012. We were told we would
6 need to produce an expert report no later than January 29, 2013. This was a much
7 shorter timeframe than we typically face. We began our analysis immediately, and
8 produced our report on the date it was due. I was then deposed in Seattle, WA on
9 February 1, 2013.

10 Q. DID THE ABBREVIATED TIMEFRAME IMPACT YOUR ANALYSIS
11 IN ANY WAY?

12 A. This limitation necessarily restricted the scope and depth of our analysis in
13 some respects. We did not have the opportunity to provide the CSI a draft report
14 of our findings, although we presented our results via a Skype teleconference on
15 January 22, 2013. With more time, we would have examined some significant
16 issues in greater detail.

17 Q. WHAT ARE THOSE ISSUES YOU WOULD HAVE PREFERRED TO
18 ANALYZE IN GREATER DETAIL?

19 A. One example is historical pricing data relating to other states where HCSC
20 has acquired Blue Cross Blue Shield plans. This ideally would have included

1 information on rate filings, administrative services charges, and benefit packages.
2 This could have been very helpful in a more detailed evaluation of whether this
3 transaction would result in higher premiums or coverage plan changes for
4 Montanans.

5 **III. GENERAL DESCRIPTION OF TRANSACTION**

6 Q. BRIEFLY DESCRIBE YOUR UNDERSTANDING OF THE PROPOSED
7 TRANSACTION.

8 A. BCBSMT and HCSC propose to enter into a transaction through which
9 HCSC would acquire insurance and Administrative Services Only business from
10 BCBSMT along with related assets and liabilities. HCSC would also acquire the
11 right to use BCBSMT's Blue Cross and Blue Shield marks. The "old" BCBSMT
12 would discharge any liabilities that remain with it, after which it would be wound
13 down and dissolved. Certain assets, including BCBSMT's surplus, would remain
14 with the old entity. Those assets remaining after any liabilities would then be
15 deposited into a foundation established pursuant to Montana law.

16 **IV. SUMMARY OF TESTIMONY**

17 Q. BRIEFLY SUMMARIZE THE TESTIMONY YOU WILL PROVIDE
18 TODAY.

19 A. Montana Code Annotated § 50-4-717 requires that BCBSMT consider
20 whether the proposed transaction would (1) result in inefficient economies of scale

1 or (2) violate state or federal antitrust laws. Considering the insurers' respective
2 cost structures, sizes, and natures of business, it is my opinion that this transaction
3 will result in improved economies in scale. I also believe the proposed transaction
4 would not raise any anticompetitive concerns based upon our application of
5 standard approaches for evaluating potential competitive effects of proposed
6 transactions.

7 Additionally, it is my understanding that the Commissioner of Securities and
8 Insurance, Montana State Auditor, must find that the transaction is in the public
9 interest. This determination includes consideration of whether: (1) the transaction
10 is likely to significantly and adversely impact the availability or accessibility of
11 health care services or coverage in the affected community, (2) sufficient
12 safeguards exist to ensure the affected community will continue to have access to
13 affordable health care, and (3) the transaction is equitable to the public interest,
14 enrollees, insureds, shareholders, and certificate holders, if any, of BCBSMT. It is
15 my opinion that the proposed transaction will not adversely impact either the
16 availability or accessibility of health care in Montana. Additionally, sufficient
17 safeguards are in place to ensure continued affordability of care. Finally, I believe
18 the transaction to be equitable to the affected parties.

1 **V. ANTITRUST CONCERNS AND ECONOMIES OF SCALE**

2 Q. PLEASE IDENTIFY THE METHODOLOGY YOU EMPLOYED IN
3 CONDUCTING YOUR ANTITRUST ANALYSIS.

4 A. We adopted the approach set forth in the Horizontal Merger Guidelines
5 issued by the United States Department of Justice and the Federal Trade
6 Commission. First, however, we had to determine whether BCBSMT and HCSC
7 currently compete in any line of business. If two companies do not compete at all
8 in a market, then a transaction of this type would have no direct effect on
9 competition. If that was the case, a Merger Guidelines analysis would be
10 unnecessary.

11 Q. HOW DID YOU DETERMINE WHETHER BCBSMT AND HCSC
12 COMPETE?

13 A. We identified the respective memberships of each of party that were located
14 in Montana. We then determined whether BCBSMT and HCSC could access each
15 other's membership, meaning whether they could potentially offer coverage to the
16 other insurer's members.

17 Q. WHAT WERE YOUR FINDINGS REGARDING THE EXTENT TO
18 WHICH BCBSMT AND HCSC COMPETE?

19 A. We found that any direct competition between the companies in Montana is
20 minimal. HCSC has very few members in Montana, mostly employees of

1 companies from a state where HCSC has a Blue Cross Blue Shield license. HCSC
2 has no sales presence in Montana. Similarly, BCBSMT cannot compete using
3 their Blue Cross Blue Shield mark outside of Montana. For example, BCBSMT
4 could not provide coverage for an employer HCSC currently covers unless that
5 employer became domiciled in Montana, which is highly unlikely. The geographic
6 Blue Cross Blue Shield Association license restrictions effectively prevent the two
7 from substantively competing for insured lives in Montana.

8 Q. DID YOUR ANTITRUST ANALYSIS END THERE?

9 A. No. We also examined market concentration consistent with approaches
10 outlined in the Merger Guidelines when firms proposing the transaction are direct
11 competitors..

12 Q. DESCRIBE HOW THE MERGER GUIDELINES ANALYSIS WORKS.

13 A. The Merger Guidelines consider a variety of factors, including three central
14 components in analyzing possible competitive effects: the product and geographic
15 dimensions within which the parties compete, the competitors present in the
16 market, and market concentration.

17 The Merger Guidelines employ the Herfindahl-Hirschmann Index, or HHI,
18 to measure market concentration. The HHI is determined through a calculation
19 involving the respective market shares of each competitor. The resulting HHI
20 value is used to characterize the market as Unconcentrated, Moderately

1 Concentrated, and Highly Concentrated. More highly concentrated markets are
2 generally thought to be more susceptible to anticompetitive concerns. HHIs are
3 calculated both with and without the proposed transaction. The difference between
4 the two HHI measurements is then calculated and evaluated to determine if
5 anticompetitive concerns may exist. Generally speaking, the higher the final
6 figure, the more likely such concerns are present.

7 Q. HOW IS A PRODUCT AND GEOGRAPHIC MARKET DETERMINED
8 UNDER THE MERGER GUIDELINES?

9 A. Product and geographic markets are determined by the hypothetical
10 monopolist test, which is intended to identify those goods and services that
11 consumers view as a close substitute. According to the Merger Guidelines, “[t]he
12 hypothetical monopolist test requires that a product market contain enough
13 products so that it would be subject to post-merger exercise of market power
14 significantly exceeding that exercised absent the merger. Specifically, the test
15 requires that a hypothetical profit-maximizing firm, not subject to price regulation,
16 that was the only present and future seller of those products (“hypothetical
17 monopolist”) likely would impose at least a small but significant and non-
18 transitory increase in price (“SSNIP”) on at least one product in the
19 market, including at least one product sold by one of the merging firms.”

1 Q. HOW DID YOU DEFINE THE PRODUCT AND GEOGRAPHIC
2 MARKET IN YOUR ANALYSIS?

3 A. Based on the hypothetical monopolist test, the primary product dimension
4 would be employer-offered plans within the state of Montana. We also performed
5 several alternative analyses using different product and geographic lines of
6 business , all of which arrived at similar conclusions. Product definitions used in
7 other calculations included commercial (including employer-offered and individual
8 plans) and fully insured products. In certain analyses, we also measured
9 concentration county-by-county (or MSA by MSA [metropolitan or micropolitan
10 statistical areas]) in addition to the state level.

11 Q. DID YOU DETERMINE THE IDENTITY OF ALL MARKET
12 COMPETITORS?

13 A. We could only obtain membership share data for HCSC and BCBSMT. We
14 therefore had to estimate aggregate market share figures for other competitors. In
15 our analysis of employer-offered plans, we determined that BCBSMT serves
16 roughly 37 percent and HCSC about three percent of Montana residents with
17 employer-provided insurance. Other insurers served the remaining 60 percent of
18 the population. By contrast, in a fully insured analysis, BCBSMT holds roughly
19 58 percent, HCSC holds one-half of one percent, and other firms hold the
20 remainder.

1 Q. DESCRIBE THE RESULTS OF YOUR MARKET CONCENTRATION
2 ANALYSIS.

3 A. Normally, we would use the market share percentages I just mentioned to
4 calculate HHIs for each analytical grouping. In the case of the main employer-
5 owned group, this was impossible. The HHI calculation requires consideration of
6 the market share of every competitor, and we did not have that data for the other
7 market players. It is still possible to calculate the change in HHI, however, as that
8 calculation only considers BCBSMT and HCSC. In the case of employer-provided
9 insurance, the HHI increases by 222. Attached Exhibit B is a table demonstrating
10 this calculation. This size of increase could indicate the possibility of competitive
11 concerns in markets the Merger Guidelines would classify as more concentrated
12 than the Unconcentrated range. However, in this case we do not believe such a
13 threat exists. This is due to the fact that HCSC and BCBSMT do not currently
14 compete, coupled with the fact that other competitors such as Cigna and
15 PacificSource appear to be making inroads into the Montana market.

16 The fully-insured analysis demonstrates that while this line of business
17 would be deemed to be Highly Concentrated, the transaction would change the
18 HHI by 59--well below the benchmark indicating competitive concerns.

19 Q. DID YOU CONSIDER THE TRANSACTION'S IMPACT UPON
20 COMPETITION FROM ANY OTHER STANDPOINT?

1 A. Yes, we examined the transaction's effect upon the provider network and
2 reimbursement rates.

3 Q. WHAT DID YOU CONCLUDE?

4 A. We determined that there were no competitive concerns from this
5 standpoint. The first issue we examined is whether the transaction would grant
6 HCSC greater market power for producer services allowing it to decrease
7 reimbursement rates. We found that HCSC currently has no contracts with
8 Montana providers, and will purchase all BCBSMT contracts through the
9 transaction. HCSC has stated that it has no plans to modify any provider contracts
10 at this time, though I am not aware of anything that prevents them from doing so.
11 If true, these facts suggest reimbursement rates will likely remain unaffected. This
12 is especially true because HCSC currently uses the BCBSMT provider network.
13 HCSC member numbers have already been considered in volume-based rate
14 negotiations with providers.

15 It is worth noting that HCSC could attempt to decrease reimbursement rates
16 through negotiations with multi-state provider networks doing business in both
17 Montana and in other states in which HCSC has a presence. We asked HCSC if it
18 had relationships with any such provider networks. HCSC did not confirm or deny
19 the existence of such relationships, stating that its provider networks in other states
20 were too large to make that determination.

1 We also considered whether the transaction would result in loss of provider
2 coverage in any regional markets. We examined the location of the current
3 provider network in relation to the location of current BCBSMT and HCSC
4 members. Loss of provider service is unlikely because the locations of HCSC and
5 BCBSMT members strongly correlate to the locations of BCBSMT providers. In
6 other words, providers are generally located where the members live.

7 Q. WOULD YOU SUMMARIZE YOUR CONCLUSIONS WITH REGARD
8 TO THE EFFECT OF THE TRANSACTION ON COMPETITION?

9 A. Any effect the transaction would have upon competition is minimal.
10 HCSC's current lack of sales presence in Montana shows that BCBSMT and
11 HCSC do not directly compete, and this combined with analyses suggested by the
12 Merger Guidelines indicates a lack of antitrust implications. The transaction
13 appears unlikely to result in reduced reimbursement rates, although such a
14 reduction is possible depending upon HCSC's future actions. Finally, the
15 transaction is unlikely to result in a reduction in provider services to HCSC and
16 BCBSMT members.

17 Q. DID YOU EXAMINE WHETHER OR NOT THE TRANSACTION
18 WOULD RESULT IN MORE EFFICIENT ECONOMIES OF SCALE?

19 A. We did.

20 Q. WHAT DID YOU CONSIDER IN MAKING THAT DETERMINATION?

1 A. We examined three factors: HCSC and BCBSMT's respective cost
2 structures, sizes, and natures of business.

3 Q. DISCUSS YOUR ANALYSIS OF THOSE FACTORS.

4 A. With regard to cost structure, insurers such as BCBSMT incur the majority
5 of their costs in three areas. These include benefit expenses, i.e. coverage of the
6 health care utilized by its insured members; claim adjustment expenses associated
7 with administering claims; and general and administrative expenses typically
8 associated with running a business. Our analysis indicates that HCSC outperforms
9 BCBSMT in all three categories. Exhibit C demonstrates the entities' respective
10 cost structures in 2011. It is worth noting that BCBSMT improved its statutory
11 administrative expense ratio from 2007 to 2011, reducing it from 17.6 percent to
12 14 percent. However, these figures generally indicate that BCBSMT could
13 anticipate lower administrative expenses as a result of the proposed transaction.

14 Regarding size, HCSC serves roughly 13.4 million customers, whereas
15 BCBSMT serves roughly 272,000. In mergers of larger entities, costs of
16 implementation can outweigh any merger-related savings. Given the size of these
17 entities, however, this is unlikely to occur.

18 Regarding the entities' respective natures of business, both BCBSMT and
19 HCSC operate similar business models and offer similar products. According to
20 HCSC and BCBSMT, the former possesses resources, infrastructure, and

1 operational expertise that BCBSMT could leverage through the transaction. If
2 true, such an arrangement would permit BCBSMT to realize significant savings.

3 Q. WOULD YOU SUMMARIZE YOUR CONCLUSION AS TO THE
4 EFFECT OF THE TRANSACTION UPON ECONOMIES OF SCALE?

5 A. It is my opinion that in light of the entities' cost structures, sizes, and natures
6 of business, the transaction would result in more efficient economies of scale.

7 **VI. IMPACT OF THE TRANSACTION UPON THE COMMUNITY**

8 Q. WHAT ISSUES DID YOU CONSIDER IN YOUR ANALYSIS OF THE
9 TRANSACTION'S IMPACT UPON THE COMMUNITY?

10 A. As I mentioned earlier, the statute requires analysis of three separate
11 components: the transaction's impact upon the availability and accessibility of
12 health care, the sufficiency of safeguards to ensure continued access to affordable
13 health care, and the extent to which the transaction is equitable to the public
14 interest of insureds and others. We addressed these issues individually.

15 Q. TURNING TO THE AVAILABILITY OF HEALTH CARE, WHAT
16 FACTORS DID YOU CONSIDER IN MAKING YOUR DETERMINATION?

17 A. As an initial matter, we defined "community" as synonymous with the state
18 of Montana. Several factors are necessary to ensure continued availability and
19 accessibility of health care in Montana. These include the sustained presence of
20 providers, brokers, and enrollees; continued competition in the marketplace; and

1 the continued presence and stability of BCBSMT (whether or not in its current
2 form).

3 Q. WHATD DID YOU LEARN REGARDING THE PRESENCE OF
4 PROVIDERS, BROKERS, AND ENROLLEES?

5 The presence of providers is vital for obvious reasons: health care is
6 administered through a provider, and a decrease in providers results in fewer health
7 care options for consumers. For reasons I addressed earlier, the transaction is
8 unlikely to cause a reduction either in provider contracts or provider
9 reimbursement rates, both of which would likely decrease the number of providers
10 in Montana. However, as described earlier HCSC could attempt to negotiate with
11 multi-state providers to decrease reimbursement rates in Montana if it had such
12 provider relationships and chose to do so.

13 The transaction is also unlikely to lower the number of brokers operating in
14 Montana. HCSC currently has no broker relationships in Montana. According to
15 the parties' agreement, HCSC will assume all broker agreements in place with
16 BCBSMT. Similar to providers, however, HCSC could leverage relationships with
17 multi-state brokers to establish lower commission rates in Montana. HCSC told us
18 that its network of out-of-state brokers is too vast to determine whether any of
19 them are related to brokers located in Montana.

1 Finally, HCSC is assuming the contracts of all current enrollees, and has
2 represented to us that they do not plan to drop coverage of any enrollees. We
3 examined enrollment levels following HCSC's acquisition of Blue Cross Blue
4 Shield operations in Texas, New Mexico, and Oklahoma, and none of these states
5 demonstrated an enrollment drop following the acquisitions. We therefore do not
6 anticipate the number of enrollees will decrease.

7 Q. WHAT DID YOU DETERMINE REGARDING THE OTHER FACTORS
8 YOU MENTIONED EARLIER?

9 A. As I stated earlier, there is no indication that the transaction will lessen
10 competition in Montana. The final consideration is the effect on BCBSMT's
11 continued presence in the market. We analyzed BCBSMT's efficiency, financial
12 health, and risk. This included consideration of BCBSMT's statutory
13 administrative expense ratio, underwriting margin, and Risk-Based Capital
14 measures, all of which relate to BCBSMT's financial viability and success. HCSC
15 outperforms BCBSMT in all three areas. On that basis, we concluded that the
16 transaction would support the continued presence of BCBSMT in the market,
17 albeit as a division of HCSC rather than a standalone entity.

18 Q. CAN YOU SUMMARIZE YOUR OPINION WITH REGARD TO THE
19 TRANSACTION'S IMPACT UPON THE AVAILABILITY AND
20 ACCESSIBILITY OF HEALTH CARE IN MONTANA?

1 A. It is my opinion that the transaction will not have a negative impact upon
2 either the availability or accessibility of health care in the community.

3 Q. HOW DID YOU DETERMINE WHETHER SUFFICIENT SAFEGUARDS
4 EXIST TO ENSURE CONTINUED ACCESS TO AFFORDABLE HEALTH
5 CARE?

6 A. We analyzed three major factors that inform the impact on affordability of
7 coverage: the potential for premium rate increases and plan modifications, and the
8 existence of governmental regulatory safeguards.

9 Q. HOW DID YOU ANALYZE THE POTENTIAL FOR FUTURE
10 PREMIUM RATE INCREASES?

11 A. We relied mainly on our analysis of statewide historical rate increases in the
12 other states in which HCSC has acquired a Blue Cross Blue Shield plan, namely
13 Texas, New Mexico, and Oklahoma. Using data collected by the US Department
14 of Health and Human Services, we compared yearly average rate increases in each
15 state with the average national increases. We then calculated the differences
16 between the state and national annual rate increases. We calculated these
17 differences both prior to and following each state's acquisition transaction
18 involving HCSC. We found that while (with one exception) average premiums for
19 these states were increasing somewhat faster than the corresponding national
20 average before the transaction, the differences between the state and national rates

1 of increase were lower after the transactions. These results suggest that the prior
2 transactions did not result in significant price increases.

3 Q. DID YOU REVIEW HCSC'S HISTORICAL RATE FILINGS IN THOSE
4 OTHER STATES?

5 A. No. Our analysis examined statewide average premium rate increases, not
6 rate increases specific to HCSC-owned entities.

7 Q. WHY NOT?

8 A. We wanted to do this initially, as that would have provided the most
9 accurate assessment. We asked HCSC if they could provide historical pricing data
10 for their Blue Cross Blue Shield plans in those states. HCSC said it did not have
11 that information.

12 Q. WOULD SUCH AN EXAMINATION HAVE BEEN HELPFUL TO
13 YOUR ANALYSIS?

14 A. Absolutely. Ideally, we would have conducted a definitive study of
15 historical price changes, including analysis of insurer-specific rate increases in
16 each state. We didn't have the data to do so. We also simply did not have the time
17 to perform such a detailed analysis in the short timeframe we worked within.

18 Q. WHAT DO YOU MEAN WHEN YOU SAY YOU CONSIDERED
19 MODIFICATION OF COVERAGE PLANS?

1 A. I am referring to changes other than rate increases. These would include a
2 change in the deductible or co-pay, or a decrease in covered benefits.

3 Q. WHAT DID YOU DETERMINE REGARDING CHANGES TO
4 COVERAGE PLANS?

5 A. HCSC told us they have no plans to modify or terminate any plan BCBSMT
6 currently offers, but that such modifications may be necessary in the event of
7 industry changes.

8 Q. DID YOU RESEARCH HISTORICAL PLAN CHANGES THAT
9 FOLLOWED ANY OF HCSC'S PREVIOUS ACQUISITIONS?

10 A. No. We didn't have plan-specific data of that nature, particularly on an
11 individual insurer level. This goes to my earlier point regarding rate increase
12 information. An ideal analysis would definitely have included an independent
13 consideration of historical plan changes, but we didn't have the data or time to do
14 so.

15 Q. ASIDE FROM HCSC'S REPRESENTATIONS, DO YOU HAVE ANY
16 OTHER INFORMATION INDICATING THAT NO PLAN CHANGES WOULD
17 OCCUR?

18 A. No. Our conclusion on this point relies solely upon HCSC's statements.

19 Q. WHAT WOULD CONSTITUTE A SAFEGUARD OF AFFORDABLE
20 HEALTH CARE FOR THE PURPOSES OF YOUR ANALYSIS?

1 A. Safeguards would generally consist of governmental regulation of premium
2 rate increases.

3 Q. WHAT, IF ANY, SUCH SAFEGUARDS EXIST IN RELATION TO THE
4 PLANS OFFERED BY BCBSMT AND HCSC?

5 A. Some safeguards exist on the federal level, but neither the federal nor state
6 governments have the authority to prevent rate increases. The Patient Protection
7 and Affordable Care Act established governmental review of premium increases
8 exceeding 10 percent for certain plans. The insurer is required to publicly disclose
9 the increases and the justification for them. Even if a rate is deemed unreasonable,
10 however, the insurer can nonetheless use the rate. In Montana, the federal
11 government performs these rate reviews. We found that BCBSMT has multiple
12 rate increases pending review ranging from 17.4 percent to 22.3 percent.

13 No safeguard exists at all on a state level. Montana is one of only a few
14 states that do not have a rate review mechanism. The CSI informed us that a bill is
15 pending in the Montana legislature that would grant the agency rate review
16 authority for all rate increases in certain health insurance markets. It is unclear
17 whether the bill will pass. If it does pass, the bill would not provide the CSI with
18 the ability to deny unreasonable rate increases.

1 Q. HOW WOULD A MONTANA RATE REVIEW PROCEDURE
2 SAFEUARD HEALTH CARE AFFORDABILITY IF IT DOES NOT PERMIT
3 RATE DISAPPROVAL?

4 A. The rate review process would provide the CSI with bargaining power to
5 negotiate rate changes, if not actual authority over rates. Notification of
6 unreasonable rate increases would also be posted on public websites, including the
7 insurer's website. Also, an insurer deemed to have implemented unreasonable rate
8 increases may be barred from selling insurance products on the federal insurance
9 exchange that is currently being established.

10 Q. WHAT IS YOUR OPINION REGARDING THE ADEQUACY OF
11 SAFEGUARDS OF HEALTH CARE AFFORDABILITY?

12 A. In my opinion, the transaction will not prevent continued access to
13 affordable health care in Montana. Our analysis indicates a likelihood that HCSC
14 will not dramatically alter premium rates and coverage plans. No rate review
15 authority exists to prevent HCSC from setting unreasonable rates, but the negative
16 byproducts of such a practice would likely to inhibit HCSC from doing so.

17 Q. HOW DID YOU ANALYZE WHETHER THE TRANSACTION IS
18 EQUITABLE TO THE PUBLIC INTEREST, ENROLLEES, INSUREDS,
19 SHAREHOLDERS, AND CERTIFICATE HOLDERS OF BCBSMT?

1 A. We conducted this analysis in stages. First, no shareholder analysis was
2 performed, as BCBSMT has no shareholders. We considered the enrollees,
3 insureds, and certificate holders together, as the same factors affect all three
4 groups. The insurers have stated they have no plan to greatly modify coverage
5 plans, enrollment, or premiums. Historical data suggests HCSC will not
6 unreasonably raise rates on these individuals. That being said, no rate review
7 authority exists to prevent such raises.

8 Because employees can be impacted in acquisition-type transactions such as
9 this one, we examined potential effects on BCBSMT employees. The agreement
10 between HCSC and BCBSMT provides that all BCBSMT employees will be hired
11 by HCSC, and the insurers state that the employees will be compensated at current
12 levels. BCBSMT employees will be transferred to a new pension system as a
13 result of the transaction. We were also learned that HCSC is considering the
14 establishment of a 100-person call center in Great Falls.

15 Q. WHAT ELSE DID YOU CONSIDER IN YOUR EQUITY
16 EVALUATION?

17 A. We considered whether the transaction was in the public interest generally.
18 On this point, we focused on the foundation that is to be established if the
19 transaction is approved. It is our understanding that the insurers expect at least
20 \$120 million to be deposited in the foundation at the conclusion of the transaction.

1 This amount includes \$17.6 million that the insurers have proposed as a purchase
2 price. The entire \$120 million would be used for the benefit of Montanans, and we
3 were told that the figure was a conservative estimate. We determined that the
4 transaction would support the public interest through the creation of this
5 foundation.

6 Q. DID YOU REVIEW INFORMATION REGARDING ANY OTHER
7 FOUNDATIONS CREATED THROUGH SIMILAR TRANSACTIONS IN
8 OTHER STATES?

9 A. We did not review any such information.

10 Q. DID YOU COMPARE THE PROPOSED PURCHASE PRICE WITH
11 THAT OF ANY OTHER BLUE CROSS BLUE SHIELD PLAN PREVIOUSLY
12 ACQUIRED BY HCSC OR ANY OTHER ENTITY?

13 A. No.

14 Q. CAN YOU SUMMARIZE YOUR OPINION ON WHETHER THE
15 PROPOSED TRANSACTION IS EQUITABLE TO THE PUBLIC INTEREST,
16 ENROLLEES, INSUREDS, AND CERTIFICATE HOLDERS OF BCBSMT?

17 A. In my opinion, the proposed transaction between HCSC and BCBSMT
18 would be equitable to all those parties, for the reasons I previously stated.

19 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

20 A. Yes.

Appendix A: Curriculum Vitae of the Authors

Timothy J. Tardiff, Ph.D.

Principal
Advanced Analytical Consulting Group, Inc.
Office: (617) 338-2224
Direct: (617) 340-7872
Email: TimTardiff@AACG.com

Professional Summary

Dr. Timothy J. Tardiff has more than 30 years of academic and consulting experience. He has participated in numerous legal and regulatory proceedings on economic issues related to competition, damages, and efficient economic regulation in a number of industries, including health care, telecommunications, and rate-regulated industries. He has published extensively on competition and economic regulation.

From 2006 to 2009, he was a Managing Director at Huron Consulting Group. Prior to joining Huron, Dr. Tardiff served as a vice president at NERA Economic Consulting. During his career, he has served as the director of Marketing Research and senior member of the transportation practice at Charles River Associates, Inc. and assistant professor in the Department of Civil Engineering and Division of Environmental Studies at the University of California, Davis.

Dr. Tardiff's recent health care experience includes an evaluation of the adequacy of the statistical sampling used to estimate the extent of allegedly improper Medicare billing in a Department of Health and Human Services administrative proceeding. He also participated in an economic evaluation of a False Claims Act action against a major pharmaceutical distributor and nursing home chain alleging improper Medicare billing by establishing a sham durable medical equipment distributor. In competition matters, Dr. Tardiff has participated as an expert witness, consultant and/or published articles on issues such as product and geographic market determination, determining whether competition is sufficient to constrain market power, evaluating claims of predatory pricing and other exclusionary conduct, and the economic basis for regulated prices.

Dr. Tardiff has participated as an expert witness and/or consultant in legal and regulatory proceedings in over 25 states and before the United States Department of Health and Human Services and the Federal Communications Commission. His international research and consulting experience includes studies and expert reports on competition issues in Canada, Japan, New Zealand, Peru, Australia, and Trinidad and Tobago. This experience includes advising regulatory authorities on competition and economic issues, most recently an economic evaluation for the Los Angeles County Metropolitan Transportation Authority of vendor proposals for providing wireless service for the Los Angeles subway system.

Education

- Ph.D., Social Sciences, University of California, Irvine, CA
- B.S., Mathematics, California Institute of Technology, Pasadena, CA

Testimony experience

- Deposition Testimony, Texas Public Utility Commission Docket No. 38389, July 16, 2012.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the on behalf of Frontier West Virginia, Frontier West Virginia, Inc., Complainant v. Appalachian Power and Wheeling Power, Defendants, File No. EB-12-MD-004, Federal Communications Commission, June 22, 2012.
- Rebuttal Testimony of Timothy J. Tardiff on the rate for wholesale services provided to competitive local exchange carriers, prepared for filing with the Texas Public Utility Commission on behalf of AT&T Texas, Docket No. 38389, May 11, 2012.
- Affidavit of Timothy J. Tardiff on statistical sampling issues, on behalf of Albert Pecherek, M.D., Medicare Appeal Number: 1-691874218, ALJ Appeal No. 1-750870135, September 16, 2011.
- Expert Report, Qwest Communications Corporation, Complainant v. Farmers and Merchants Telephone Company, Defendant, File No. EB-07-MD-001, Federal Communications Commission, November 30, 2010.
- Affidavit of Timothy J. Tardiff on the reasonableness of dominant carrier regulation for fixed line services, Telecommunications Services of Trinidad and Tobago, Claimant and Telecommunications Authority of Trinidad and Tobago, Defendant, Claim No. CV2010-02389, High Court of Justice, Republic of Trinidad and Tobago, September 29, 2010.
- “The Economics of Access Stimulation: Economic Evaluation of the ‘Fact Report’ by Drs. Alan Pearce and W. Brian Barrett,” ex parte filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, August 5, 2010.
- Statement of Timothy Tardiff on the regulation of retail local telephone services, prepared for filing with the Commonwealth Public Utilities Commission, Commonwealth of the Northern Mariana Islands on behalf of the Micronesia Telecommunications Corporation, CPUC Docket No.09-3, July 30, 2010.
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, February 24, 2010.
- Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, January 19, 2010

- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the economics of forbearance from regulating certain wholesale services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 09-135, October 21, 2009. (Includes Dennis L. Weisman and Timothy J. Tardiff, “Principles of Competition and Regulation for the Design of Telecommunications Policy”).
- Deposition Testimony, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 27, 2009.
- Expert Rebuttal Report, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 4, 2009 (with Matthew G. Medlin).
- Expert Report, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, July 21, 2009.
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the competitiveness of Commercial Mobile Radio Services, prepared for filing with the Federal Communications Commission, WT Docket No. 09-66, July 13, 2009.
- Declaration of Timothy J. Tardiff on the economics of whether traffic stimulation arrangements violate the prohibition in Section 254(k) of the 1996 Telecommunications Act against noncompetitive services subsidizing competitive services, ex parte filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 6, 2009.
- Direct Testimony on pole attachment rates prepared for filing on with the West Virginia Public Service Commission on behalf of Verizon, West Virginia, Inc., Case No. 07-1279-E-C (panel testimony), June 4, 2008.
- Direct and cross-examination testimony of Timothy Tardiff on deregulation of single line retail telephone services, before the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, May 21, 2008.
- Counterstatement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, April 28, 2008.
- Statement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, March 17, 2008.
- Reply Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 16, 2008.
- Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications

Commission on behalf of Qwest Communications International, WC Docket No. 07-135, December 17, 2007.

- Reply Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates,” prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, September 25, 2007.
- Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates,” prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, August 24, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-28118, April 30, 2007.
- Joint Expert Supplemental Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, April 6, 2007.
- Joint Expert Reply Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, March 5, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, February 23, 2007.
- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price discrimination allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-48, December 1, 2006.
- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price squeeze allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-42, August 8, 2006.
- “Response to Digicel’s Economic Analysis of Interconnection Costs and Rates,” prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 12, 2006.
- “Report on Interconnection Costs in Trinidad and Tobago,” prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 4, 2006.

- “Benchmarking Mobile Termination Rates: Evaluation of the .econ Report,” prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), February 10, 2006.
- Rebuttal Testimony of Timothy J. Tardiff on the use price floors for retail services, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, April 1, 2005.
- Rebuttal Testimony of Timothy J. Tardiff in support of the proposal of Pacific Bell Telephone Company (SBC California) to rebalance NIC Revenues, Rulemaking 03-08-018, March 21, 2005.
- Statement of William Taylor and Timothy Tardiff on alternative intercarrier compensation payment mechanisms for Voice over Internet Protocol long-distance calls, “Analysis of QSI Study,” prepared for filing with the Federal Communications Commission on behalf of the United States Telecom Association, Docket No. 03-266, March 4, 2005.
- Panel Rebuttal Testimony of Timothy J. Tardiff, Francis J. Murphy, and Christian M. Dippon on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, November 9, 2004.
- Reply Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 19, 2004.
- Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 4, 2004.
- Declaration of William E. Taylor, Timothy J. Tardiff, and Harold Ware on the sunset of BOC separate affiliate and related requirements, ex parte communication prepared for filing with the Federal Communications Commission on behalf of BellSouth, SBC, and Verizon, WC Docket No. 02-112 and CC Docket No. 00-175, August 10, 2004.
- Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, August 6, 2004.
- Supplemental Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, June 18, 2004.
- Rebuttal Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, May 12, 2004.

- Reply Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, April 26, 2004.
- Reply Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, February 13, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Oklahoma State Corporation Commission on behalf of SBC Oklahoma, Cause No. 200300646, February 11, 2004.
- Rebuttal Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 30, 2004.
- Reply Declaration of Howard Shelanski and Timothy Tardiff on the review of rules for pricing unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 03-173, January 30, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 16, 2004.
- Rebuttal Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Missouri Public Service Commission on behalf of SBC Missouri, Case No. TO-2004-0207 Phase I, January 16, 2004.
- Reply Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Rulemaking 95-04-043, Investigation 95-04-044, January 16, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Missouri Public Service Commission on behalf of SBC Missouri, Case No. TO-2004-0207 Phase I, December 18, 2003.
- Declaration of Alfred E. Kahn and Timothy Tardiff on the review of rules for pricing unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 03-173, December 16, 2003.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Rulemaking 95-04-043, Investigation 95-04-044, December 12, 2003.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Public Utilities Commission of Ohio on behalf of SBC Ohio, Case No. 03-2040-TP-COI, November 12, 2003.
- Statement of Timothy J. Tardiff on the Commission's Telecommunications Service Obligation (TSO) Model, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, May 20, 2003.

- Rebuttal Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Application Nos. 01-02-024, 01-02-035, 02-02-031, 02-02-032, and 02-03-002, March 12, 2003.
- Reply Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Application Nos. 01-02-024, 01-02-035, 02-02-031, 02-02-032, and 02-03-002, February 7, 2003.
- Affidavit of Timothy J. Tardiff on the use of the FCC's Synthesis Model to calculate unbundled network switching and transport prices, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, December 20, 2002.
- Declaration of Timothy J. Tardiff in support of the Petition of Verizon for Forbearance From The Prohibition Of Sharing Operating, Installation, and Maintenance Functions Under Section 53.203(a)(2) Of The Commission's Rules, CC Docket No. 96-149, September 24, 2002.
- Affidavit of Timothy J. Tardiff on unbundled network element pricing, prepared for filing with the Federal Communications Commission on behalf of ACS, WC Docket No. 02-201, July 24, 2002.
- Reply Declaration of Alfred E. Kahn and Timothy J. Tardiff in the triennial review of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, CC Docket Nos. 01-338, 96-98, and 98-147, July 17, 2002.
- Statement of Alfred E. Kahn and Timothy J. Tardiff on funding the telecommunications service (universal service) obligation, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, June 10, 2002.
- Supplemental Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, April 22, 2002.
- Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, March 18, 2002.
- Surrebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.
- Surrebuttal Testimony of Timothy J. Tardiff and Joseph A. Gansert on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing

with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.

- Rebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Declaration of Alfred E. Kahn and Timothy J. Tardiff submitted to the U.S. Federal Communications Commission on behalf of Verizon regarding broadband regulation, December 18, 2001.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, November 16, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled switch cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 30, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled loop cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 19, 2001.
- Surrebuttal Testimony of Howard Shelanski and Timothy J. Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, September 21, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Verizon-Maryland, Case No. 8879, September 5, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a and Modified Synthesis Models for unbundled loop and switch costs, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 4, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, August 27, 2001.
- Affidavit of Timothy J. Tardiff on the use of proxy costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, July 27, 2001.

- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the costs of unbundled network elements, prepared for filing with the Massachusetts Department of Telecommunications and Energy on behalf of Verizon-Massachusetts, Docket No. D.T.E. 01-20, July 18, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the costs of unbundled network elements, prepared for filing with the New Jersey Board of Public Utilities on behalf of Verizon-New Jersey, Docket No. TO00060356, October 12, 2000.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 10, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Nevada Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Nevada Bell Long Distance for Provision of In-Region InterLATA Services in Nevada (with Alfred E. Kahn), July 24, 2000.
- Responsive Testimony on the HAI Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 98-C-1357 (filed as part of panel testimony), June 26, 2000.
- Affidavit of Timothy J. Tardiff on avoided cost discounts for wholesale services, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, April 17, 2000.
- Third Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, March 24, 2000.
- Second Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 25, 2000.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Delaware Public Service Commission on behalf of Bell Atlantic-Delaware, Docket No. 99-251, February 24, 2000.
- Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 11, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), January 10, 2000.

- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. R-00994697 and R-00994697C0001, December 21, 1999.
 - “Relaxed Regulation of High Capacity Services in Phoenix and Seattle: The Time is Now,” prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petitions of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix and Seattle MSAs (with Alfred E. Kahn), July 21, 1999.
 - Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. P-00991648 and P-00991649, June 15, 1999.
 - “High Capacity Competition in Seattle: Reply to Comments of Intervening Parties,” prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), March 10, 1999.
 - Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1999.
 - Surrebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, February 4, 1999.
 - Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Rhode Island Public Utilities Commission on behalf of Bell Atlantic-Rhode Island, Docket No. 2681, January 15, 1999.
 - Reply Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 11, 1999.
 - “Economic Evaluation of High Capacity Competition in Seattle,” prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), December 22, 1998.
 - Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 18, 1998.
 - “Measuring and Recovering the Costs of Long-Term Number Portability: Implications of Price Cap Regulation,” Prepared for Southwestern Bell for presentation to the Federal Communications Commission, December 10, 1998.
- Direct Testimony of Alfred E. Kahn and Timothy J. Tardiff, filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services,

- Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, November 20, 1998.
- “High Capacity Competition in Phoenix: Reply to Comments of Intervening Parties,” prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), October 28, 1998.
 - “Measuring and Recovering the Costs of Long-Term Number Portability,” Prepared for Southwestern Bell for presentation to the Federal Communications Commission, October 28, 1998 (with Alfred E. Kahn).
 - Declaration of Timothy J. Tardiff on the economic impacts of separate subsidiary requirements for the offer of advanced services by incumbent local exchange carriers, prepared for filing with the Federal Communications Commission on behalf of Bell Atlantic, in the matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability, October 15, 1998.
 - “An Analysis of the HAI Model Release 5.0a,” Rebuttal Testimony filed with the Florida Public Service Commission, Docket No. 980696-TP, on behalf of GTE Florida, September 2, 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
 - “Economic Evaluation of High Capacity Competition in Phoenix,” prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), August 14, 1998.
 - Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the New Hampshire Public Utilities Commission on behalf of Bell Atlantic-New Hampshire, Docket No. DE-97-1171, June 22, 1998.
 - Rebuttal Affidavit before the Arkansas Public Service Commission in the matter of the Application of Southwestern Bell Telephone Company Seeking Verification that It Has Fully Complied with and Satisfied the Requirements of Section 271 (c) of the Telecommunications Act of 1996 (with Alfred E. Kahn), June 11, 1998.
 - Rebuttal Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas’ Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), May 27, 1998.
 - Rebuttal Affidavit Before the Public Utilities Commission of the State of California in support of Pacific Bell’s Draft Application for Authority to Provide InterLATA Services in California (with Alfred E. Kahn), May 20, 1998.
 - “An Analysis of the Hatfield Model Release 4.0,” prepared for filing with the California Public Utilities Commission on behalf of GTE California, May 1, 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).

- Reply Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 27, 1998.
- Rebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, Case No. PUD 970000560, April 21, 1998.
- Reply Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), April 17, 1998.
- Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 8, 1998.
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc., Pacific Bell, and Pacific Bell Communications for Provision of In-Region InterLATA Services in California (with Alfred E. Kahn), March 31, 1998.
- “Economic Principles Governing Measurement of Nonrecurring/OSS Costs: An Analysis of the AT&T/MCI Recommendations,” prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 4, 1998 (with Gregory M. Duncan).
- “Analysis of the Hatfield Model Release 5.0a,” Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133d, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- “Analysis of the Hatfield Model Release 5.0a,” Rebuttal Testimony filed with the South Carolina Public Service Commission, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), March 2, 1998.
- “Analysis of the Hatfield Model Release 5.0a,” Rebuttal Testimony filed with the Kentucky Public Service Commission, on behalf of GTE South, February 26, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell

- Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Arkansas (with Alfred E. Kahn), February 24, 1998.
- Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas’ Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), February 17, 1998.
- “Analysis of the Hatfield Model Release 5.0,” Rebuttal Testimony filed with the Alabama Public Utilities Commission, on behalf of GTE South, February 13, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications. Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a/ Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Oklahoma (with Alfred E. Kahn), February 13, 1998.
- “Analysis of the Hatfield Model Release 5.0,” Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133b, on behalf of GTE South, January 30, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on switching costs, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, December 22, 1997.
- “Reply to AT&T Recommendations for Regulatory Treatment of OSS Costs,” prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, December 15, 1997 (with Gregory M. Duncan).
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Vermont Public Service Board on behalf of Bell Atlantic-Vermont, Case No. 57-13, November 21, 1997.
- Reply Affidavit of Timothy J. Tardiff on the Hatfield Model, filed with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 94-C-0095 and Case 28425, November 17, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 21, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model to universal service funding requirements, prepared for filing with the New Jersey Board of Public Utilities on behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, October 20, 1997.
- “Analysis of the Hatfield Model Release 4.0,” filed with the Pennsylvania Public Utility Commission on behalf of GTE North, October 20, 1997 (with Gregory M. Duncan, Rafi A.

Mohammed, Christian M. Dippon, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).

- Supplemental Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 10, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 30, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State Corporation Commission of Virginia on behalf of Bell Atlantic-Virginia, Case No. PUC970005, June 10, 1997.
- Reply Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Federal Communications Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, May 26, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the District of Columbia Public Service Commission on behalf of Bell Atlantic-DC, Formal Case No. 962, May 2, 1997.
- Declaration of Timothy J. Tardiff on OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 16, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Bell Atlantic-Maryland, Case No. 8731-II, April 4, 1997.
- “Economic Evaluation of the Hatfield Model, Release 3.1,” filed with the Washington Utilities and Transportation Commission on behalf of GTE, March 28, 1997 (with Gregory M. Duncan and Rafi Mohammed).
- “Economic Evaluation of the Hatfield Model, Version 2.2, Release 2,” prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 18, 1997 (with Gregory M. Duncan).
- Statement of Alfred E. Kahn and Timothy J. Tardiff, “Funding and Distributing the Universal Service Subsidy,” Prepared for US West for presentation to the Federal Communications Commission, March 13, 1997.
- Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 6, 1997.
- Surrebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Dockets A-310203F0002, A-310213F0002, A-310236F0002, A-310258F0002, February 21, 1997.

- Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, February 21, 1997.
- “Reply to Kravtin/Selwyn Analysis of the Gap Between Embedded and Forward-Looking Costs,” affidavit filed with the Federal Communications Commission, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, on behalf of GTE, February 14, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Arkansas Public Service Commission on behalf of Southwestern Bell Telephone Company, Docket 96-395-U, January 9, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Kansas Corporation Commission on behalf of Southwestern Bell Telephone Company, Docket 97-AT&T-290-Arb, January 6, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Massachusetts Department of Public Utilities on behalf of New England Telephone and Telegraph Company, Docket 96-80/81, October 30, 1996.
- Statement of Alfred E. Kahn and Timothy J. Tardiff, “Joint Marketing, Personnel Separation and Efficient Competition Under the Telecommunications Act of 1996,” Prepared for US West for presentation to the Federal Communications Commission, October 11, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Oklahoma Public Service Commission on behalf of Southwestern Bell Telephone Company, September 30, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Missouri Public Service Commission on behalf of Southwestern Bell Telephone Company, Case No. TO-97-040 & TO 97-40-67, September 30, 1996.
- “Economic Evaluation of Version 2.2 of the Hatfield Model,” prepared for filing in interconnection arbitrations in Pennsylvania, California, Florida, Indiana, North Carolina, Oklahoma, Iowa, Texas, Virginia, Minnesota, Hawaii, Nebraska, Kentucky, Washington, and Missouri on behalf of GTE, September 1996 (with Gregory M. Duncan).
- Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Texas Public Utility Commission on behalf of Southwestern Bell Telephone Company, Docket Nos. 16189, 16196, 16226, 16285, 16290, September 6, 1996.
- “Economic Analysis of MFS’s Numerical Illustration,” prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as amended and Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC’s Local Exchange Area, on behalf of US West, August 30, 1996.
- Affidavit of Timothy J. Tardiff on proxy rates for unbundled local switching, prepared for filing with the Federal Communications Commission on behalf of GTE Corporation, petition

for a stay of the First Report and Order in the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, August 28, 1996.

Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of New York Telephone, July 15, 1996.

Reply Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 10, 1996.

“Economic Evaluation of Version 2.2 of the Hatfield Model,” attached to Reply Testimony of Timothy J. Tardiff, prepared for filing with the California Public Utilities Commission on behalf of GTE California, July 10, 1996. Also presented to the Federal Communications Commission as attachment to letter from Whitney Hatch of GTE to William F. Caton, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, July 11, 1996.

Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, June 14, 1996.

Declaration of Alfred E. Kahn and Timothy J. Tardiff, prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, on behalf of Bell Atlantic, May 30, 1996.

Declaration of Timothy J. Tardiff on Round I and Round II OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1996.

“Economic Evaluation of Pacific Bell’s Round I and Round II Cost Studies: Reply Comments,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 17, 1996.

“Incremental Cost Principles for Local and Wireless Network Interconnection,” prepared for filing with the Federal Communications Commission on behalf of Pacific Telesis, March 4, 1996 (with Richard D. Emmerson).

“Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review: Reply Comments,” Prepared for filing with the Federal Communications Commission on behalf of the United States Telephone Association, March 1, 1996 (with William E. Taylor and Charles J. Zarkadas).

Declaration of Timothy J. Tardiff on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions (update), prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.

“Universal Service Funding and Cost Modeling,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.

“Changes in Interstate Price Regulation: Reply Comments,” prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, January 10, 1996.

- “Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review,” Prepared for filing with the Federal Communications Commission on behalf of the United States Telephone Association, December 18, 1995 (with William E. Taylor and Charles J. Zarkadas).
- “Changes in Interstate Price Regulation: An Economic Evaluation of the Pacific Bell and Nevada Bell Proposal,” prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, December 11, 1995 (with Alfred E. Kahn).
- “Evaluation of the Benchmark Cost Model,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 1, 1995.
- Affidavit of William E. Taylor and Timothy J. Tardiff on interconnection regulation, prepared for filing with the Mexican Secretariat of Communications and Transport on behalf of Southwestern Bell International Holdings Corporation, October 18, 1995.
- Participant, California Public Utilities Commission, Full Panel Hearing on Universal Telephone Service, September 29, 1995.
- “Incentive Regulation and Competition: Reply Comments,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 18, 1995 (with Richard L. Schmalensee and William E. Taylor).
- “Incentive Regulation and Competition: Issues for the 1995 Incentive Regulation Review,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 8, 1995 (with Richard L. Schmalensee and William E. Taylor).
- “Preserving Universality of Subscription to Telephone Service in an Increasingly Competitive Industry,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995 (with Alfred E. Kahn).
- Declaration of Timothy J. Tardiff and Lester D. Taylor on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995.
- “Economic Evaluation of Proposed Long-Run Incremental Cost (LRIC) Methodology,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 13, 1995 (with Richard D. Emmerson).
- “California Public Utilities Commission Proposed Rules for Local Competition: An Economic Evaluation,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1995.
- “Benefits and Costs of Vertical Integration of Basic and Enhanced Telecommunications Services,” prepared for filing with the Federal Communications Commission, Computer III Further Remand Proceedings, CC Docket No. 95-20, on behalf of Bell Atlantic, Bell South, NYNEX, Pacific Bell, Southwestern Bell, and U S West, April 6, 1995 (with Jerry A. Hausman).
- “Evaluation of the MCI’s Universal Service Funding Proposal,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995.

- “Franchise Services and Universal Service,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995 (with Richard D. Emmerson).
- Illinois Commerce Commission on behalf of GTE North: surrebuttal testimony on the benefits of intraMSA presubscription, September 30, 1994.
- Illinois Commerce Commission on behalf of GTE North: rebuttal testimony on the benefits of intraMSA presubscription, September 16, 1994.
- “Economic Evaluation of OIR/OII on Open Access and Network Architecture Development: Reply Comments,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 31, 1994 (with Richard D. Emmerson).
- “Declaration of Timothy J. Tardiff on Pacific Bell's Productivity Under Price Caps,” prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 28, 1994.
- “Regulation of Mobile and Wireless Telecommunications: Economic Issues,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 25, 1994
- “Economic Evaluation of OIR/OII on Open Access and Network Architecture Development,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1994 (with Richard D. Emmerson).
- “Access to Intelligent Networks: Economic Issues,” prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, December 1, 1993.
- “The Effect of SFAS 106 on Economy-Wide Wage Rates,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 1, 1993
- “Economic Evaluation of the NRF Review: Reply Comments,” prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 7, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- “Performance Under Alternative Forms of Regulation in the U.S. Telecommunications Industry,” prepared for filing with the Canadian Radio-television and Telecommunications Commission on behalf of AGT Limited, April 13, 1993. Timothy J. Tardiff and William E. Taylor, Study Directors.
- “Pacific Bell's Performance Under the New Regulatory Framework: An Economic Evaluation of the First Three Years,” prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, April 8, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- “Pricing Interconnection and the Local Exchange Carrier's Competitive Interstate Services,” prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 19, 1993.
- “The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation: Reply Comments,” prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, July 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.

- “Costs and Benefits of IntraLATA Presubscription,” prepared for filing with the State of New York Public Service Commission on behalf of New York Telephone, May 1, 1992. Timothy J. Tardiff and William E. Taylor, Study Directors.
- “The New Regulatory Framework 1990-1992: An Economic Review,” prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 1, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- “The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation,” prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, April 15, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- “The Treatment of FAS 106 Accounting Changes Under Pacific Bell's Price Regulation Plan: Economic Analysis of the DRA Supplemental Testimony,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 21, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- “The Treatment of FAS 106 Accounting Changes Under Pacific Bell's Price Regulation Plan,” prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, November 15, 1991. William E. Taylor and Timothy J. Tardiff, Study Directors.
- California Public Utilities Commission on behalf of Pacific Bell: economic principles for pricing flexibility for Centrex service, Filed November 1990.
- Expert Witness on State Transportation Energy Forecasting, California Energy Commission, Sacramento, September 1980.

Selected Client Reports

- Summary of Proposed Revenue Sharing Arrangements: 2013 Update, (Confidential), Prepared for the Los Angeles County Metropolitan Transportation Authority, January 23, 2013.
- Summary of Proposed Revenue Sharing Arrangements, (Confidential), Prepared for the Los Angeles County Metropolitan Transportation Authority, April 25, 2012.
- Principles of Competition and Regulation for the Design of Telecommunications Policy, With Dennis L. Weisman, Prepared for Qwest Corporation, October 21, 2009.
- Report on the TSTT Cost Model, With Agustin J. Ros, Nigel Attenborough, and Trung Lu (Confidential), Prepared for Telecommunications Services of Trinidad and Tobago Limited, September 14, 2005.
- Interconnection Costing Methodology: Theory and Practice, With William E. Taylor, Nigel Attenborough, Agustin J. Ros, and Yogesh Sharma, Prepared for the Chinese Academy of Social Sciences, April 15, 2003.
- Imputation Tests for Bundled Services, With Greg Houston, Carol Osborne, and Jennifer Fish, Prepared for the Australian Competition and Consumer Commission, January 2003.

- Anticompetitive Bundling Strategies, With Greg Houston, Carol Osborne, and Jennifer Fish, Prepared for the Australian Competition and Consumer Commission, January 2003.
- Estimación de la TFP de Telefónica del Perú y del Cambio en Precios del Regimen de Precios Tope, With Agustin Ros, Jose Maria Rodriguez and Juan Hernandez, Final Report prepared for the Supervising Agency for Private Investment in Telecommunications in Peru (OSIPTEL) on behalf of Telefonica de Peru, June 22, 2001.
- Enhancing Competition for Broadband Services: The Case for Removing the Prohibition against High-Speed InterLata Transmission by Regional Bell Operating Companies, With Alfred E. Kahn, Prepared for the United States Telecom Commission, May 22, 2000 (released April 2001).
- An Economic Evaluation of Network Cost Models, With Jaime d’Almeida, William Taylor, and Charles Zarkadas, Prepared for Telecordia Technologies, August 2000.
- An Analysis of Resale in Long Distance Telecommunications Markets, With William E. Taylor and J. Douglas Zona (Confidential) Prepared for plaintiffs in Darren B. Swain, Inc. d/b/a U.S. Communications v. AT&T Corp., November 15, 1995.
- An Analysis of Long Distance Telecommunications Markets, With William E. Taylor and J. Douglas Zona (Confidential) Prepared for plaintiffs in US WATS, Inc. and USW Corp. v. AT&T Corp., August 22, 1995.
- Economic Significance of Interconnection, Prepared for Japan Telecom, June 1995.
- The Effect of Competitive Entry into Local Exchange and State Toll Markets on the Revenues of Southern New England Telephone, with J.D. Zona, (Confidential), Prepared for Southern New England Telephone, February 1995.
- Long-Distance Call Alert (LDCA) Study: Customer Choice Model Findings, with C.J. Zarkadas, (Confidential), Prepared for Southwestern Bell, August 9, 1994.
- Pricing Principles for LEC Services, (with R.D. Emmerson), Prepared for BellSouth Communications, July 8, 1994.
- Quantifying the Handicaps of Unequal Access, (Confidential) Prepared for Japan Telecom, January 1994.
- Overcoming Unequal Access: The International Experience, with S. Krom, (Confidential) Prepared for Japan Telecom, January 1994.
- Market Potential For Cellular Radio And Other Personal Communications Products. (Confidential) Prepared for Pac Tel Corporation, July 1990.
- Customer Demand for Local Telephone Services: Models and Applications. Prepared for South Central Bell Telephone Company, August 1987.
- Evaluation Plans for Conservation and Load Management Programs. Prepared for New England Electric System, July 1987.
- Telecommunications Competition for Large Business Customers in New York (Confidential). Prepared for NYNEX Corporation, June 1987.

- ① Demand for Intrastate Long Distance Optional Calling Plans by Business and Residential Customers, with J.A. Hausman and A. Jaffe, (Confidential), Prepared for Southern New England Telephone, December 1985.
- ② “Estimation of Residential Conservation Service Program Electricity Savings,” Prepared for Southern California Edison Company, July 1984.
- ③ The Demand for Local Telephone Service Upon the Introduction of Optional Local Measured Service. In part. Final report, prepared for Southern New England Telephone, July 1982.
- ④ Transit Strategies to Improve Air Quality in the Philadelphia Region. In part. Final report prepared for the Delaware Valley Regional Planning Commission, April 1982.
- ⑤ Estimation of Energy Impacts of State Transportation Improvement Program Projects. In part. Final report prepared for the California Energy Commission, January 1982.
- ⑥ Consumer Representation for Transportation Energy Conservation. In part. Final report prepared for the U.S. Department of Energy, July 1981.
- ⑦ Indicators of Supply and Demand for Transportation Fuels. In part. Prepared for the California Energy Commission, December 1980.
- ⑧ State of the Art in Research on Consumer Impacts of Fuel Economy Policies: Recent Findings and Recommendations for Further Research. In part. Prepared for the National Highway Traffic Safety Administration, January 1980.

Selected Publications and Presentations

- Tardiff, T.J., “Protected Profits Benchmark: Comment on Salop,” *Antitrust Law Journal*, forthcoming.
- Levy, D.S. and Tardiff, T.J., “Pricing and Maximizing Profits within Corporations: Applications of Lester Taylor’s Insights,” Presented at Telecommunications Demand and Investment: The Road Ahead, Conference in Honor of Emeritus Professor Lester D. Taylor, Jackson Hole, Wyoming, October 10, 2011.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., “The FCC Pole Attachment Order and the Future of Joint Use,” *Communications Environmental & Land Use Law*, Vol.2011, No. 6, June 1, 2011, pp. 5-10.
- Tardiff, T.J., Alfred E. Kahn (1917-2010), *Journal of Regulatory Economics*, Vol. 39, No.2, 2011, pp. 221-222.
- Tardiff, T.J., “Evaluating Competition Policies: Efficiency Metrics for Network Industries,” *Journal of Competition Law & Economics*, Vol. 6, No. 4, 2010, pp. 957-972. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 28th Annual Conference, Skytop, Pennsylvania, May 14, 2009.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., “The National Broadband Plan and the FCC Pole Attachment Proceeding,” *Communications Environmental & Land Use Law Report*, Vol. 13, No. 10, October 2010, pp. 3-7.
- Tardiff, T.J., “Performance-Based Regulation,” Presented to Commissioners and Staff of the Alberta Utilities Commission, Edmonton, Alberta, Canada, September 29-30, 2009.
- Tardiff, T.J. and Weisman, D.L., “The Dominant Firm Revisited,” *Journal of Competition Law & Economics*, Vol. 5, No. 3, 2009, pp. 517-536. Also presented at the Seventeenth Biennial Conference of the International Telecommunications Society, Montreal, Canada, June 25, 2008.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., “A Legal and Economic Justification for a Uniform Pole Attachment Rate,” (Three Part Series), *Communications Environmental & Land Use Law Report*, Vol. 11, No. 11 through Vol. 12, No. 1, December 2008 through January 2009.
- Hausman, J.A., Sidak, J.G., and Tardiff, T.J., “Are Regulators Forward-Looking? The Market Price of Copper Versus the Regulated Price of Mandatory Access to Unbundled Loops in Telecommunications Networks,” *Federal Communications Law Journal*, Vol. 61, 2008, December.
- Weisman, D.L. and Tardiff, T.J., “Editors’ Foreword,” Special Issue in Honour of Alfred Kahn’s 90th Birthday, *Review of Network Economics*, Vol. 7, 2008, December.
- Tardiff, T.J. Panelist, “Telecommunications: Assessing the Lessons from the 1996 Telecom Act,” Silicon Flatirons Conference, Deregulation Revisited: A Tribute to Fred Kahn, University of Colorado, Boulder, September 5, 2008.

Tardiff, T.J. and Ros, A.J., "Establishing Mobile Termination Rates: Lessons from the Caribbean," Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 27th Annual Conference, Skytop, Pennsylvania, May 15, 2008.

Tardiff, T.J., "Changes in Industry Structure and Technological Convergence: Implications for Competition Policy and Telecommunications Regulation," *International Economics and Economic Policy*, Vol. 4, 2007, pp. 103-133. Earlier versions were presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 25th Annual Conference, Skytop, Pennsylvania, May 19, 2006 and the 34th Telecommunications Policy Research Conference, Arlington, Virginia, October 1, 2006.

Ware, H. and Tardiff, T.J., "Facilities-Based Entry and Predatory Pricing Allegations: Lessons from Iowa," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 26th Annual Conference, Skytop, Pennsylvania, May 17, 2007.

Taylor, W. and Tardiff, T., "Anticompetitive Price Squeezes in the Telecommunications Industry: A Common Complaint about Common Facilities," in L. Wu, ed., *Economics of Antitrust: Complex Issues in a Dynamic Economy*, 2007.

Tardiff, T.J., Instructor, First Advanced Course in Regulatory Economics and Process, Public Utility Research Center, University of Florida, Gainesville, Florida, April 3, 2007.

Tardiff, T. J., "The Economics of Access and Interconnection Charges in Telecommunications," in M. Crew and D. Parker, eds., *The International Handbook of Economic Regulation*, Cheltenham: Edward Elgar, 2006.

Calvin Monson and Timothy Tardiff, "A Course on Telecommunications Interconnection," Presented to Global Information and Communications Technologies, The World Bank Group, Washington, D.C., September 22, 2005.

Tardiff, T.J. and Taylor, W.E. "Prevention and Detection of Price Squeezes Nine Years after the Telecommunications Act," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 24th Annual Conference, Skytop, Pennsylvania, May 19, 2005.

Tardiff, T.J. and Taylor, W.E., "Aligning Price Regulation with Telecommunications Competition," *Review of Network Economics*, Vol. 2, 2003, December. An earlier version was presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 22nd Annual Conference, Skytop, Pennsylvania, May 22, 2003.

Tardiff, T. J., "Product Bundling and Wholesale Pricing," in G. Madden, ed., *Emerging Telecommunications Networks*, *The International Handbook of Telecommunications Economics*, Volume II, Cheltenham: Edward Elgar, 2003.

Crandall, R.W., Hahn, R.W., and Tardiff, T.J., "The Benefits of Broadband and the Effect of Regulation," in R.W. Crandall and J. Alleman, eds., *Broadband: Should We Regulate High Speed Internet Access?*, Washington: AEI-Brookings Center Joint for Regulatory Studies, 2002.

- Tardiff, T. J., “Universal Service,” in M.A. Crew and J.C. Schuh, eds., *Markets, Pricing, and Deregulation of Utilities*, Boston: Kluwer, 2002.
- Tardiff, T.J., “Pricing Unbundled Network Elements and the FCC’s TELRIC Rule: Economic and Modeling Issues,” *Review of Network Economics*, Vol. 1, Issue 2, 2002, pp. 132-146. An earlier version was presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 21st Annual Conference, Newport, Rhode Island, May 23, 2002.
- Tardiff, T.J., “Valuing the Use of Incumbent Telecommunications Networks,” Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 20th Annual Conference, Tamiment, Pennsylvania, May 24, 2001.
- Tardiff, T.J., “State of Competition for Local Exchange Services: Implications for Telecommunications Policy,” Presented at the Law Seminars International 2nd Annual Conference on Telecommunications in the Southwest, Phoenix, Arizona, February 15, 2001.
- Tardiff, T.J., “New Technologies and Convergence of Markets: Implications for Telecommunications Regulation,” *Journal of Network Industries*, Vol. 1, No. 4, 2000, pp. 447-468. Also presented at the Thirteenth Biennial Conference of the International Telecommunications Society, Buenos Aires, Argentina, July 3, 2000.
- Tardiff, T. J., “Cost Standards for Efficient Competition,” in M.A. Crew, ed., *Expanding Competition in Regulated Industries*, Boston: Kluwer, 2000. Also presented at the Competitive Entry in Regulated Industries Seminar, Rutgers University Center for Research in Regulated Industries, Newark, New Jersey, October 22, 1999.
- Tardiff, T.J., “Demand for High-Speed Services: Implications for RBOC Entry Into InterLATA Services,” Presented at the 2000 International Communications Forecasting Conference, Seattle, Washington, September 28, 2000.
- Tardiff, T.J., “Universal Access to Telephone Service and Implications of the USO,” Presented at the Rutgers University, Center for Research in Regulated Industries, 8th Conference on Postal and Delivery Economics, Vancouver, Canada, June 10, 2000.
- Tardiff, T.J., “Universal Access to Telephone Service: Theory and Practice,” Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 19th Annual Conference, Lake George, New York, May 25, 2000.
- Tardiff, T.J., “The Forecasting Implications of Telecommunications Cost Models,” and “Forward-Looking Telecommunications Cost Models,” in J. Alleman and E. Noam, eds., *The New Investment Theory of Real Options and its Implications for Telecommunications Economics*, Boston: Kluwer, 1999. The first article was also presented at the 1999 International Communications Forecasting Conference, Denver, Colorado, June 17, 1999.
- Kahn, A.E., Tardiff, T.J., and Weisman, D.L., “The Telecommunications Act at Three Years: An Economic Evaluation of Its Implementation by the Federal Communications Commission,” *Information Economics and Policy*, Vol. 11, No. 4, December 1999, pp. 319-365.

- Tardiff, T.J., “Effects of Large Price Reduction on Toll and Carrier Access Demand in California,” in L.D. Taylor and D.G. Loomis, eds., *The Future of the Telecommunications Industry: Forecasting and Demand Analysis*, Boston: Kluwer, 1999. Also presented at the 1996 International Communications Forecasting Conference, Dallas, Texas, April 18, 1996.
- Grieve, W.A. and Tardiff, T.J., “Universal Service in the United States and Canada: Funding High-Cost Areas,” Presented at the Telecommunications Policy Research Conference, Alexandria, Virginia, September 27, 1999.
- Tardiff, T.J., “The Growth of Local Exchange Competition: Implications for Telecommunications Regulation,” Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 12th Annual Western Conference, San Diego, California, July 8, 1999.
- Tardiff, T.J., “Trends in Local Exchange Competition,” Presented at the 25th Annual Rate Symposium, St. Louis, Missouri, April 27, 1999.
- Tardiff, T.J., “Regional Bell Operating Company InterLATA Entry and the Public Interest,” Presented at the 25th Annual Rate Symposium, St. Louis, Missouri, April 26, 1999.
- Tardiff, T.J., “Cost Standards for Pricing Unbundled Elements and Retail Services,” Presented at the Institute for International Research Fourth Annual Conference for Competitive Pricing of Telecommunications Services, Washington, DC, March 25, 1999.
- Tardiff, T.J., Speaker: Cost of Hypothetical Providers vs. Real Providers Panel, INDETEC International, Cost and Public Policy: 1999, February 10, 1999.
- Tardiff, T.J. Discussant: “TELRIC: An Overview,” Presented at The Columbia University New Investment Theory of Real Options and its Implications for the Cost Models in Telecommunications Conference, New York, New York, October 2, 1998.
- Tardiff, T.J., Workshop Leader, Wholesale and Retail Pricing Workshop, Presented at the Institute for International Research Third Annual Conference for Competitive Pricing of Telecommunications Services, Chicago, IL, July 22, 1998.
- Tardiff, T.J., “Pricing Essential Inputs and Efficient Competition,” Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Public Utility Economics, 11th Annual Western Conference, Monterey, California, July 9, 1998.
- Tardiff, T.J., “Incremental Cost Basis for Interconnection Pricing,” Presented at the Institute for International Research Interconnection ’98 Conference, Washington, D.C., April 29, 1998.
- Tardiff, T.J., “Regulatory Implications of Local Exchange Cost Models,” Presented at the 24th Annual Rate Symposium, Kansas City, Missouri, April 28, 1998.
- Tardiff, T.J., “What’s Happening in Local Competition,” Presented at the 24th Annual Rate Symposium, Kansas City, Missouri, April 27, 1998.
- Tardiff, T.J. “Pricing and New Product Options with Telecommunications Competition,” in D.R. Dolk, ed., *Proceedings of the Thirty-First Annual Hawaii International Conference on*

Systems Sciences, Vol. V, Modeling Technologies and Intelligent Systems Track, Los Alamitos: IEEE Computer Society, January 6-9, 1998, pp. 416-425.

- Froeb, L.M., Tardiff, T.J., and Werden, G.J., “The Demsetz Postulate and the Effects of Mergers in Differentiated Products Industries,” in F.S. McChesney, ed., *Economic Inputs, Legal Outputs: The Role of Economists in Modern Antitrust*, New York: Wiley, 1998. Also presented at the Annual Meeting of the American Economic Association, Washington, D.C. January 8, 1995.
- Tardiff, T.J., “Pricing and Product Offerings for the New Competitive Telecommunications Environment,” Presented at the Canadian Institute Competitive Strategies Telecommunications Conference, Toronto, Canada, September 29, 1997.
- Tardiff, T.J., “Cost Basis for Pricing: Embedded or Incremental,” Presented at the Institute for International Research Cost Allocation Forum, Atlanta, Georgia, September 17, 1997.
- Tardiff, T.J., “Costing and Pricing for Local Exchange Competition: Experience Under the U.S. Telecommunications Act,” in P. Enslow, P. Desrochers, and I. Bonifacio, eds., *Proceedings of the Global Networking '97 Conference*, Amsterdam: IOS Press, June 15-18, 1997, pp. 286-292.
- Tardiff, T.J., “Unbundling and Resale: Lessons from South of the Border,” presented at the Bell Canada Total Competition Briefing Session, Toronto, Canada, April 16, 1997.
- Tardiff, T.J., “Unbundling and Resale Under the Telecommunications Act and the FCC’s Interconnection Order: Implications for Industry Structure and Competitive Strategies,” presented at the International Communications Group Telecommunications Business Environment Conference, Denver, Colorado, January 7, 1997.
- Hausman, J. and T. Tardiff, “Valuation of New Services in Telecommunications,” in A. Dumont and J. Dryden, *The Economics of the Information Society, Luxembourg: Office for Official Publications of the European Communities, 1997, pp. 76-80.* Also presented to the OECD Workshop on the Economics of the Information Society, Toronto, Canada, June 28, 1995.
- Tardiff, T.J., “Universal Service with Full Competition,” in S.L. Hansen, ed., *Universal Service with Network Competition*, University of Auckland, 1996, pp. 51-64. Also presented at the Eleventh Biennial Conference of the International Telecommunications Society, Seville, Spain, June 18, 1996 and on my behalf by J. Oliver at the Telecommunications Universal Service Symposium, Wellington, New Zealand, July 2, 1996.
- Tardiff, T.J., “Efficient Pricing of Competitive Local Exchange Services: Understanding the Costing Principles,” presented at the Institute for International Research Conference on Competitive Costing Strategies for Local Exchange Services, New Orleans, Louisiana, October 24, 1996.
- Tardiff, T. J. and Taylor, W.E., “Revising Price Caps: The Next Generation of Incentive Regulation Plans,” in M.A. Crew, ed., *Pricing and Regulatory Innovations Under Increasing Competition*, Norwell, MA: Kluwer, 1996, pp. 21 - 38. Also presented at the Rutgers University Center for Research in Regulated Industries Research Seminar, May 3, 1996.

- Tardiff, T.J., “New Product and Pricing Options for the Competitive Telecommunications Environment: Lessons from Consumer Choice Studies,” presented at the International Communications Group Business Opportunities in Telecommunications Conference, Denver, Colorado, July 31, 1996.
- Tardiff, T.J., “Efficient Local Competition and Universal Service,” presented at the International Communications Group Business Opportunities in Telecommunications Conference, Denver, Colorado, July 31, 1996.
- Tardiff, T.J., “Pricing and Product Offerings in a Competitive Environment,” presented at the Canadian Institute Conference on Telecommunications Pricing, Toronto, Ontario, Canada, March 7, 1996.
- Werden, G.J., Froeb, L.M., and Tardiff, T.J. “The Use of the Logit Model in Applied Industrial Organization,” *International Journal of the Economics of Business*, Vol. 3, No. 1, 1996, pp. 83-105.
- Tardiff, T.J. “Incentive Regulation and Competition: The Next Generation,” presented at the 27th Annual Conference of the Institute of Public Utilities at Michigan State University, Williamsburg, Virginia, December 12, 1995.
- Tardiff, T.J., “Effects of Presubscription and Other Attributes on Long-Distance Carrier Choice,” *Information Economics and Policy*, Vol. 7, No. 4, December 1995, pp. 353-366. Also presented at the 1994 National Telecommunications Forecasting Conference, Boston, Massachusetts, May 24, 1994.
- Tardiff, T.J. and J.D. Zona, “Effects of Competitive Entry on Capital Recovery,” presented at the United States Telephone Association Capital Recovery Seminar, Chicago, Illinois, October 19, 1995.
- Tardiff, T.J. and L.J. Perl, “Price Regulation and Productivity,” presented to the Public Staff of the North Carolina Utilities Commission, Raleigh, North Carolina, September 6, 1995.
- Hausman, J.A. and T.J. Tardiff, “Efficient Local Exchange Competition,” *Antitrust Bulletin*, Vol. 40, No. 3, Fall 1995, pp. 529-556.
- Instructor, “Seminar in Current Economic Issues”, United States Telephone Association course, Orlando, Florida, April 3-5, 1995.
- Tardiff, T.J., W.E. Taylor, and C.J. Zarkadas, “Periodic Review of Price Cap Plans: Economic Issues,” presented at the Telecommunications Policy Research Conference, Solomons, Maryland, October 2, 1994.
- Participant in AGT International Symposium on Local Interconnection Policy, Emerald Lake, British Columbia, Canada, May 27-28, 1994.
- Tardiff, T.J., “Access Charges and Toll Prices in the United States: An Economic Evaluation,” Presented to representatives of Japanese Long-Distance Companies, New York, New York, May 16, 1994.
- Tardiff, T.J. and W.E. Taylor, “Telephone Company Performance Under Alternative Forms of Regulation in the U.S.,” presented at the Telecommunications Policy Research Conference, Solomons, Maryland, October 4, 1993.

- Tardiff, T.J., “Interconnection and LEC Competitive Services: Pricing and Economic Efficiency,” presented at the Telestrategies Conference: The Access Charge Revolution, Washington, D.C. May 18, 1993.
- Hausman, J., T. Tardiff, and A. Belinfante, “The Effects of the Breakup of AT&T on Telephone Penetration in the United States,” *The American Economic Review*, Vol. 83, May 1993, pp. 178-184.
- Tardiff, T.J., “Assessing the Demand for New Products and Services: Theory and Practice,” presented at the NRR Conference on Telecommunications Demand for New and Existing Services, Denver, Colorado, August 6, 1992.
- Tardiff, T.J., “Price and Cost Standards for Increasingly Competitive Telecommunications Services,” presented at the Ninth International Conference of the International Telecommunications Society, Sophia Antipolis, France, June 17, 1992.
- Tardiff, T.J. “Modeling The Demand For New Products and Services,” presented at the NTDS Forum, Santa Fe, New Mexico, September 27, 1991.
- Tardiff, T.J. and C. Zarkadas, “Forecasting Tutorial,” presented at the National Telecommunications Forecasting Conference, May 29, 1991.
- Tardiff, T.J. and W.E. Taylor, “Pricing the Competitive Services of Regulated Utilities,” National Economic Research Associates, Working Paper No. 7, May 1991.
- Hausman, J.A. and T.J. Tardiff, “Growth in New Product Demand Taking into Account The Effects of Price and Competing Products: Mobile Telecommunications,” Presented at the Massachusetts Institute of Technology Telecommunications Business and Economics Program Second Annual Symposium, Cambridge, Massachusetts, November 1990.
- Tardiff, T.J., “Structuring Telecommunications in Other Countries: View from the UK, Europe and Canada,” Presented at the United State Telephone Association Affiliated Interest Issues Committee 1990 Fall Conference, Traverse City, Michigan, September 1990.
- Tardiff, T.J. and M.O Bidwell, Jr., “Evaluating a Public Utility's Investments: Cash Flow vs. Revenue Requirement,” *Public Utilities Fortnightly*, May 10, 1990.
- Tardiff, T.J. and C.J. Zarkadas, “Forecasting Demand for New Services: Who, What, and When,” Presented at the Bellcore/Bell Canada Demand Analysis Forum, Hilton Head South Carolina, April 1990.
- Tardiff, T.J., “Consumer Welfare with Discrete Choice Models: Implications for Flat versus Measured Local Telephone Service,” Presented at the Bellcore/Bell Canada Demand Analysis Forum, Hilton Head South Carolina, April 1990.
- Tardiff, T.J., “Telephone Regulation in California: Towards Incentive Regulation and Competition,” Presented to the Bell Canada Economic Council, Hull, Quebec, Canada, February 1990.
- Tardiff, T.J., “Measuring Competitiveness in Telecommunications Markets,” in National Economic Research Associates, *Telecommunications in a Competitive Environment. Proceeding of the Third Biennial Telecommunications Conference*, Scottsdale, Arizona, April 1989, pp. 21-34.

- Hausman, J.A., T.J. Tardiff, and H. Ware, "Competition in Telecommunications for Large Users in New York," in National Economic Research Associates, Telecommunications in a Competitive Environment. Proceeding of the Third Biennial Telecommunications Conference, Scottsdale, Arizona, April 1989, pp. 1-19.
- Perl, L.J. and T.J. Tardiff, "Effects of Local Service Price Structures on Residential Access Demand," Presented at the International Telecommunications Society North American Regional Meeting, Ottawa, Ontario, Canada, June 1989.
- Tardiff, T.J. and W.E. Taylor, "Costing Principles for Competitive Assessment," in Telecommunications Costing in a Dynamic Environment, Proceedings of the Bellcore-Bell Canada Conference on Telecommunications Costing, 1989, pp. 497-518.
- Tardiff, T.J., "Forecasting the Impact of Competition for Local Telephone Services." Presented at the Bellcore National Forecasting Conference, New Orleans, April 1987.
- Tardiff, T.J., "Is Bypass Still a Threat," in National Economic Research Associates, Telecommunications in a Competitive Environment. Proceedings of Conference held in Scottsdale, Arizona, March 1987, pp. 27-41.
- Tardiff, T.J., "Benefit Measurement with Customer Choice Models." Presented at the Bellcore Telecommunications Demand Modeling Conferences, New Orleans, October 1985.
- Tardiff, T.J., "The Economics of Bypass," Presented at the Bellcore Competitive Analysis and Bypass Tracking Conference. Denver, March 1985.
- Tardiff, T.J., "Class of Service Choice Model." Presented at the Telecommunications Marketing Forum. Chicago, September 1984.
- Tardiff, T.J., "Demand for New Telecommunications Product and Services." Presented at the Fifth International Conference on Futures Analyses, Forecasting and Planning for Telecommunications. Vancouver, July 1984.
- Tardiff, T.J., "Pricing and Marketing in the Competitive Local Access Market." In Present and Future Pricing Issues in Electric, Gas, and Telecommunications Industry. Proceeding of the Ninth Annual Rate Symposium on Problems of Regulated Industries. Columbia: University of Missouri, 1983.
- Tardiff, T.J., J. Hausman and A. Baughcum, "The Demand for Optional Local Measured Service." In Adjusting to Regulatory, Pricing and Marketing Realities. Proceedings of the Fourteenth Annual Conference of the Institute of Public Utilities. East Lansing: Michigan State University, 1983.
- Tardiff, T.J., W.B. Tye, L. Sherman, M. Kinnucan, and D. Nelson, Application of Disaggregate Travel Demand Models. National Cooperative Highway Research Program Report 253, 1982.
- Tardiff, T.J., D. Wyckoff, and B. Johnson, "Shippers' Preferences for Trucking Services: An Application of the Ordered Logit Model." Proceedings of the Transportation Research Forum, Vol. 23, 1982.
- Tardiff, T.J., P. M. Allaman, and F. C. Dunbar, New Approaches to Understanding Travel Behavior. National Cooperative Highway Research Program Report 250, 1982.

Exhibit II.3: Membership and Shares for Employer-Provided Health Insurance

		Members	Share
Total	[A]	475,000	100.0%
BCBSMT	[B]	175,512	36.9%
HCSC	[C]	14,294	3.0%
Other Competitors	[D]	285,194	60.0%
HHI Change	[E]	222	

Notes and Sources:

[A] The Bureau of Business and Economic Research, The University of Montana, "The Status of Montana's Health Insurance Population," Prepared for Montana Office of the

[B] "Membership by County - Fully Insured.xlsx", "Membership by County - Self

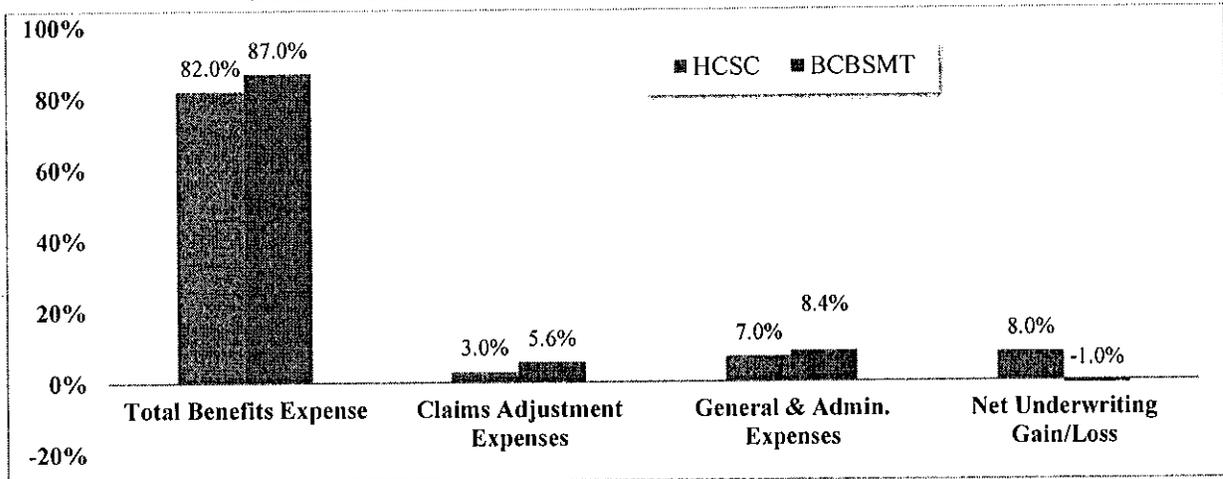
[C] "HCSC enrollment in Montana by county.pdf"

[D] = [A] - [B] - [C]

[E] = 20,000 * [B] * [C]

Exhibit B

Exhibit V.1: Cost Structure of BCBSMT and HCSC for 2011 ¹



¹ Statutory Financial Statements for BCBSMT, 2011.