# Case Study #3: Is there a cybersecurity workforce crisis in state governments??

## Case Scenario:

A membership organization for state government officials has asked your cybersecurity consulting firm to partner with it in developing a one-day workshop on workforce development needs for cybersecurity workers. Your part in this endeavor is to provide the coordinating committee with a position paper which discusses the question: “Is there a cybersecurity workforce crisis in state governments? Your paper should be no more than 3 pages in length and must address both sides of the question (“yes, there is a crisis” and “no, there is not a crisis”).

## Research:

1. Read / Review the Week 5 readings.
2. Research authoritative sources which support the “Yes” side of the question. Here are several sources to help you get started:
   1. [*http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2015/5/11/hiring-cybersecurity-staff-is-hard-for-states*](http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2015/5/11/hiring-cybersecurity-staff-is-hard-for-states)
   2. [*http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1410TheCybersecurityWorkforce.pdf*](http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1410TheCybersecurityWorkforce.pdf)
   3. *Comparing Private Sector and Government Worker Salaries* <http://reason.org/news/show/public-sector-private-sector-salary> (This source argues both sides of the compensation / education arguments.)
3. Research authoritative sources which support the “No” side of the question. For example, states may have a shortage of workers overall. Or, the lack of competitive compensation claim may be inaccurate. Or, you may find that the shortage of cybersecurity workers is unrelated to the type of employer (that is, everyone is having problems finding qualified personnel).
   1. Budgetary Constraints (p. 3, Figure 1.4) <http://www.csg.org/knowledgecenter/docs/ta0210workshortage.pdf>
   2. IT Workforce hiring issues: <http://www.nascio.org/Portals/0/Publications/Documents/NASCIO_ITWorkforce_UnderPressure.pdf>
   3. State vs Private Compensation (see “Conclusions” on p. 15) <https://www.aei.org/wp-content/uploads/2014/04/-biggs-overpaid-or-underpaid-a-statebystate-ranking-of-public-employee-compensation_112536583046.pdf>
   4. Global talent gap <http://thehill.com/blogs/congress-blog/technology/239113-cybersecurity-talent-worse-than-a-skills-shortage-its-a>
4. Review the best practice recommendations from the NICE report. Select three to five best practices which state governments could benefit from implementing. <http://niccs.us-cert.gov/sites/default/files/documents/files/Best%20Practices%20for%20Planning%20a%20Cybersecurity%20Workforce_062813_v4.2_FINAL_NICE%20branded_0.pdf>
5. Review alternative recommendations for attracting and retaining qualified talent (workers) to a state or region. Select 3 or more which you believe would be beneficial for state government hiring efforts for cybersecurity personnel.
   1. *About Good Neighbor Next Door* (ask yourself if this program or something similar should be extended to cybersecurity personnel) <http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/reo/goodn/gnndabot>
   2. *Attracting Big Talent to Small Cities* <http://www.hreonline.com/HRE/view/story.jhtml?id=534358095>
   3. *7 Ways to Attract and Retain Talent* (without having to compete on salaries) <http://www.oyginc.com/articles/attractarticle1/>
   4. *Government Needs to Rethink How They Attract IT Talent* <http://www.governing.com/columns/tech-talk/gov-remaking-your-workforce.html>

## Write:

Write a two to three page summary of your research. At a minimum, your summary must include the following:

1. An introduction or overview of the cybersecurity workforce issues which impact State governments. This overview should address the political, economic, socio-cultural (included education), and technological factors which contribute to the perceived lack of qualified cybersecurity workers. This introduction should be suitable for an executive audience.
2. A separate section which addresses three to five specific reasons why states have difficulty hiring a sufficient number of trained and qualified cybersecurity workers for positions in state agencies and offices.
3. A separate section which addresses three to five specific “non-cybersecurity” reasons why a *workforce shortage* affecting state governments may currently exist. You may also choose to argue that the workforce shortage arises out of state budget problems rather than training and education or salary.
4. A recommendations section which addresses three to five marketing or hiring actions which state governments could take to attract cybersecurity talent and reduce or alleviate a cybersecurity workforce shortage for trained and qualified cybersecurity personnel. These recommendations should include several alternative practices which deemphasize salary.

Your white paper should use standard terms and definitions for cybersecurity and privacy. The following sources are recommended:

* ISACA Glossary <http://www.isaca.org/pages/glossary.aspx>
* *Guidelines on Security and Privacy in Public Cloud Computing* <http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-144.pdf>

## Submit For Grading

Submit your case study in MS Word format (.docx or .doc file) using the Case Study #1 Assignment in your assignment folder. (Attach the file.)

## Formatting Instructions

Use standard APA formatting for the MS Word document that you submit to your assignment folder. Formatting requirements and examples are found under Course Resources > APA Resources.

## Additional Information

1. You are expected to write grammatically correct English in every assignment that you submit for grading. Do not turn in any work without (a) using spell check, (b) using grammar check, (c) verifying that your punctuation is correct and (d) reviewing your work for correct word usage and correctly structured sentences and paragraphs. These items are graded under Professionalism and constitute 20% of the assignment grade.
2. You are expected to credit your sources using in-text citations and reference list entries. Both your citations and your reference list entries must comply with APA 6th edition Style requirements. Failure to credit your sources will result in penalties as provided for under the university’s Academic Integrity policy.

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| **Criteria** | **Excellent** | **Outstanding** | **Acceptable** | **Needs Improvement** | **Needs Significant Improvement** | **Missing or Unacceptable** |
| Introduction or Overview for the Case Study | 20 points  Provided an excellent introduction or overview of the cybersecurity workforce issues which impact State governments. This overview addressed 5 or more specific political, economic, socio-cultural (included education), and technological factors which contribute to the perceived lack of qualified cybersecurity workers. The overview appropriately used information from 3 or more authoritative sources. | 18 points  Provided an outstanding introduction or overview of the cybersecurity workforce issues which impact State governments. This overview addressed 4 or more specific political, economic, socio-cultural (included education), and technological factors which contribute to the perceived lack of qualified cybersecurity workers. The overview appropriately used information from 2 or more authoritative sources. | 16 points  Provided an acceptable introduction or overview of the cybersecurity workforce issues which impact State governments. This overview addressed 3 or more specific political, economic, socio-cultural (included education), and technological factors which contribute to the perceived lack of qualified cybersecurity workers. The overview appropriately used information from 1 or more authoritative sources. | 14 points  Provided an overview but the section lacked important details about the case. Information from authoritative sources was cited and used in the overview. | 10 points  Attempted to provide an introduction to the case study but this section lacked detail and/or was not well supported by information drawn from authoritative sources. | 0 points  The introduction and/or overview sections of the paper were off topic. |
| Reasons Behind Cybersecurity Workforce Shortages in State Government | 15 points  Provided an excellent discussion of the reasons why states have difficulty hiring a sufficient number of trained and qualified cybersecurity workers for positions in state agencies and offices. Provided 3 or more specific examples specific to the cybersecurity workforce. Appropriately used information from 3 or more authoritative sources. | 10 points  Provided an outstanding discussion of the reasons why states have difficulty hiring a sufficient number of trained and qualified cybersecurity workers for positions in state agencies and offices. Provided 3 or more specific examples specific to the cybersecurity workforce. Appropriately used information from 2 or more authoritative sources. | 7 points  Provided an acceptable discussion with two or more reasons why states have difficulty hiring a sufficient number of trained and qualified cybersecurity workers for positions in state agencies and offices. Appropriately used information from 1 or more authoritative sources. | 6 points  Discussed at least one reason why states have difficulty hiring enough personnel for their cybersecurity positions in state agencies and offices. Appropriately used information from authoritative sources. | 4 points  Attempted to provide information about state hiring difficulties for cybersecurity personnel but the discussion lacked detail and/or was not well supported by information drawn from authoritative sources. | 0 points  This section was missing, off topic, or failed to provide information about hiring in state governments for cybersecurity personnel. |
| Non-Cybersecurity Reasons Why States Have Difficulty Hiring Trained & Qualified Workers | 15 points  Provided an excellent discussion of the "non-cybersecurity" reasons why states have difficulty hiring a sufficient number of trained and qualified workers for positions in state agencies and offices. Provided 5 or more general examples which were not specific to the cybersecurity workforce. Appropriately used information from 3 or more authoritative sources. | 10 points  Provided an excellent discussion of the "non-cybersecurity" reasons why states have difficulty hiring a sufficient number of trained and qualified workers for positions in state agencies and offices. Provided 4 or more general examples which were not specific to the cybersecurity workforce. Appropriately used information from 2 or more authoritative sources. | 7 points  Provided an acceptable discussion of the "non-cybersecurity" reasons why states have difficulty hiring a sufficient number of trained and qualified workers for positions in state agencies and offices. Provided at least one general example which was not specific to the cybersecurity workforce. Appropriately used information from 1 or more authoritative sources. | 6 points  Discussed at least one non-cybersecurity reason why states have difficulty hiring enough personnel for their cybersecurity positions in state agencies and offices. Appropriately used information from authoritative sources. | 4 points  Attempted to provide information about non cybersecurity reasons behind state hiring difficulties for cybersecurity personnel but the discussion lacked detail and/or was not well supported by information drawn from authoritative sources. | 0 points  This section was missing, off topic, or failed to provide information about hiring in state governments for cybersecurity personnel. |
| Recommendations for Alternative Hiring Practices to Attract and Retain Cybersecurity Personnel | 20 points  Provided an excellent discussion which addressed at least five marketing or hiring actions which state governments could take to attract cybersecurity talent and reduce or alleviate a cybersecurity workforce shortage for trained and qualified cybersecurity personnel. These recommendations included 3 or more alternative practices which deemphasize salary. Appropriately used information from 3 or more authoritative sources. | 18 points  Provided an outstanding discussion which addressed at least three marketing or hiring actions which state governments could take to attract cybersecurity talent and reduce or alleviate a cybersecurity workforce shortage for trained and qualified cybersecurity personnel. These recommendations included 2 or more alternative practices which deemphasize salary. Appropriately used information from 2 or more authoritative sources. | 16 points  Provided an acceptable discussion which addressed marketing or hiring actions which state governments could take to attract cybersecurity talent and reduce or alleviate a cybersecurity workforce shortage for trained and qualified cybersecurity personnel. These recommendations included at least one alternative practice which deemphasized salary. Appropriately used information from  1 or more authoritative sources. | 14 points  Recommended at least two hiring practices which could help state governments recruit and retain cyber security personnel.  Appropriately used information from authoritative sources. | 9 points  Recommended at least one hiring practice which could help state governments recruit and retain cyber security personnel.  The discussion lacked detail and/or was not well supported by information drawn from authoritative sources. | 0 points  Did not address best practices for hiring cybersecurity personnel. |
| Addressed security issues using standard cybersecurity terminology | 5 points  Demonstrated excellence in the integration of standard cybersecurity terminology into the case study. | 4 points  Provided an outstanding integration of standard cybersecurity terminology into the case study. | 3 points  Integrated standard cybersecurity terminology into the into the case study | 2 points  Used standard cybersecurity terminology but this usage was not well integrated with the discussion. | 1 point  Misused standard cybersecurity terminology. | 0 points  Did not integrate standard cybersecurity terminology into the discussion. |
| APA Formatting for Citations and Reference List | 5 points  Work contains a reference list containing entries for all cited resources. Reference list entries and in-text citations are correctly formatted using the appropriate APA style for each type of resource. | 4 points  Work contains a reference list containing entries for all cited resources. One or two minor errors in APA format for in-text citations and/or reference list entries. | 3 points  Work contains a reference list containing entries for all cited resources. No more than 3 minor errors in APA format for in-text citations and/or reference list entries. | 2 points  Work has no more than three paragraphs with omissions of citations crediting sources for facts and information. Work contains a reference list containing entries for cited resources. Work contains no more than 5 minor errors in APA format for in-text citations and/or reference list entries. | 1 point  Work attempts to credit sources but demonstrates a fundamental failure to understand and apply the APA formatting standard as defined in the *Publication Manual of the American Psychological Association* (6th ed.). | 0 points  Reference list is missing. Work demonstrates an overall failure to incorporate and/or credit authoritative sources for information used in the paper. |
| Professionalism Part I: Organization & Appearance | 5 points  Submitted work shows outstanding organization and the use of color, fonts, titles, headings and sub-headings, etc. is appropriate to the assignment type. | 4 points  Submitted work has minor style or formatting flaws but still presents a professional appearance. Submitted work is well organized and appropriately uses color, fonts, and section headings (per the assignment’s directions). | 3 points  Organization and/or appearance of submitted work could be improved through better use of fonts, color, titles, headings, etc. OR Submitted work has multiple style or formatting errors. Professional appearance could be improved. | 2 points  Submitted work has multiple style or formatting errors. Organization and professional appearance need substantial improvement. | 1 point  Submitted work meets minimum requirements but has major style and formatting errors. Work is disorganized and needs to be rewritten for readability and professional appearance. | 0 points  Submitted work is poorly organized and formatted. Writing and presentation are lacking in professional style and appearance. Work does not reflect college level writing skills. |
| Professionalism Part II: Execution | 15 points  No formatting, grammar, spelling, or punctuation errors. | 14 points  Work contains minor errors in formatting, grammar, spelling or punctuation which do not significantly impact professional appearance. | 13 points  Errors in formatting, spelling, grammar, or punctuation which detract from professional appearance of the submitted work. | 11 points  Submitted work has numerous errors in formatting, spelling, grammar, or punctuation. Work is unprofessional in appearance. | 4 points  Submitted work is difficult to read / understand and has significant errors in formatting, spelling, grammar, punctuation, or word usage. | 0 points  Submitted work is poorly executed OR does not reflect college level work. |
| **Overall Score** | **Excellent 90 or more** | **Outstanding 80 or more** | **Acceptable 70 or more** | **Needs Improvement 56 or more** | **Needs Significant Improvement 36 or more** | **Missing or Unacceptable 0 or more** |