



DATA INTEGRATION



DATA MANAGEMENT



STUDY GUIDE

DIGITAL DATA SOLUTIONS



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1 | INTRODUCTION

The IAB Digital Data Solutions Certification (DDSC) program has been developed for Digital Data Solutions Managers working in digital media. This program covers the data-related portions of individuals working in Ad Operations, Business Development, Product Management, Marketing, Legal and Sales. Specific job tasks include protecting consumers and organizations by establishing data policies, creating new data solutions, syndicating data between platforms, evaluating the integrity of data, managing existing data supplies and partner relations and collaborating cross-functionally internally and externally to enable data to enhance advertising effectiveness.

This IAB Digital Data Solutions Certification (DDSC) is the highest industry credential for advertising Data Professionals. Individuals who earn the certification have demonstrated their knowledge and competency in the area of advertising data, and are dedicated to upholding high standards of ethical and professional practice in the industry. Individuals meeting eligibility requirements must pass a multiple-choice exam in order to qualify for certification and earn the DDSC designation.

The purpose of this study guide is to improve candidates' preparedness for taking the DDSC exam. It contains useful information about exam and question format, requisite specialized knowledge, and specific content areas that will be tested. Spread throughout the guide are 10 sample exam questions (with a detailed answer guide in Appendix B) to acquaint candidates with question style and identify priority topics to review as they prepare for the exam. The study guide also provides links to areas on the web which might provide useful in refreshing candidates' familiarity with specific knowledge, capabilities, and skills that may appear on the exam.

The IAB staff has also developed a candidate handbook in order to describe all aspects of the certification process and assist candidates in preparation for the exam. The handbook contains an overview of exam content, eligibility criteria, information on registering for the exam, guidelines for taking the exam, relevant policies and requirements, and links to the application and other relevant information. The candidate handbook can be downloaded from the IAB Certification website, at iab.com/topics/certification/.



2 | ABOUT THE EXAM

Exam Format

The IAB Digital Data Solutions Certification (DDSC) exam consists of 100 multiple-choice questions and you have two hours to take the exam. Eighty questions are scored, and 20 are pre-tested for statistical purposes, but not scored. You are scored only on the 80 exam questions and only correct answers are counted. You will not receive feedback on the pre-tested questions.

Your appointment at the testing lab is for two hours. You will have five minutes to agree to the nondisclosure agreement for the DDSC examination. Thereafter, you will have 1 hour and 55 minutes to take the exam. You are permitted to take a restroom break; however your break time counts in the 1 hour and 55 minutes allotted to test.

It is the policy of the IAB to develop examinations utilizing a psychometrically valid process. The examination was developed by subject-matter experts under the guidance of psychometricians (experts in measurement and test development) and is designed to measure the knowledge, skills, and abilities required to perform competently as a person working with advertising data.

Scoring

Candidates will receive their final result at the test center, which will designate their pass/fail status. The passing point—or the score you need to achieve in order to pass—was also determined utilizing valid psychometric procedures. The exam was built to be scored on a pass/fail basis, to assess whether an individual possesses a minimum level of knowledge, capabilities, and skills deemed necessary to successfully perform the data-related tasks of a Data Professional. The IAB follows best practices in all of its test development activities and has a high degree of confidence that only those who meet the competency requirements pass the examination.

Detailed raw and/or percentage scores will not be provided, since the exam was developed for diagnostic, rather than comparative, purposes. Successful candidates will be notified that they have passed and will be mailed a printed certificate and further instruction on proper use of the credential process. Candidates who fail will receive a diagnostic report of their overall performance on each content area of the exam. This information is provided so candidates can see their areas of greatest weakness, and prepare themselves to retake the exam.



Exam Content

The DDSC credential is built on the belief that a successful and knowledgeable digital media Data Professional should have a foundational understanding of these five areas covered in the exam:

- A. Establishing Data Policies.** Companies with successful digital media data operations require clear policies governing its related rules and processes, to ensure data usefulness, integrity, and security. Data solutions professionals work to define these policies, through their knowledge of the digital media ecosystem, the regulatory and legislative environment, and their organization’s business goals. They evaluate data sources to determine fit with existing company policies and perform risk assessments to determine the financial, legal, and business impact of non-compliance. Where gaps exist, a digital data solutions professional will define steps to obtain policy compliance, educate relevant teams on data policy compliance, and communicate status to internal and external stakeholders. Finally, this professional audits products for data policy compliance and takes steps to help make products compliant.
- B. Managing Data Supply.** Once data policies are established and operationalized, a logical next step is determining which data the company will use. Successful digital data solutions managers define their company’s data needs, through knowledge of its business goals, existing data assets, external technologies, and market trends. They then select data sources, scope technical integrations, set internal and external expectations and negotiate data-related contracts. Once these third-party relationships are established, the digital data solutions professional facilitates the ingestion and integration of data and maps the data to an appropriate organizational taxonomy. The Data Professional manages quality assurance of the data supply and validates data integrity. Finally, they must know how to handle the business end of managing data supply, such as calculating and executing payouts with partners and monitoring and optimizing their company’s related P&L.
- C. Creating Data Products.** In addition to comprehending the mechanics and business of data supply, a successful digital media Data Professional may also be asked to help create new data products. This involves defining market needs, performing feasibility analyses, building product requirements, and helping to determine a go-to market strategy for these new products. Sometimes, a customized solution is desired to meet a client’s specific data needs. In these cases, a data solutions manager should know how to assess the opportunity and determine whether to pursue it.
- D. Activating Data Integrations.** This section relates to the process of successfully routing and connecting sets of data. A digital data solutions manager must scope integration requirements, execute integrations, and identify and resolve any technical issues. They also must effectively report on data delivery – by defining KPIs, designing reports to track them, and distributing those reports to relevant stakeholders.

The blueprint on the next page shows what content areas will be tested, as well as their approximate weighting on the exam.



Digital Data Solutions Certification Exam Blueprint

Content Areas		Percent of Exam
A	Establishing Data Policies:	15%
1	Define Policies	
2	Evaluate Data Sources	
3	Perform Risk Assessment	
4	Ensure Policy Compliance	
B	Managing Data Supply:	35%
1	Define Data Needs	
2	Select Data Sources	
3	Scope Technical Integration	
4	Set Internal and External Expectations	
5	Negotiate Data Contracts	
6	Ingest Data	
7	Map Data to Taxonomies	
8	Manage Data QA	
9	Validate Data Integrity	
10	Calculate and Execute Pay-outs	
11	Monitor and Optimize P&L	
C	Creating Data Solutions:	35%
1	Define Market Data Needs	
2	Perform Feasibility Analysis	
3	Define Product Requirements	
4	Determine Go-to-Market Strategy	
5	Assess Customized Solution	
D	Managing Partner Relationships:	15%
1	Scope Integration Requirements	
2	Maintain Data Integration	
3	Report on Delivery Data	
4	Document Bugs, Workarounds, and Enhancement Requirements	
5	Evaluate Success Metrics	
6	Contribute to Product or Feature Sunset Strategy	
7	Provide Custom Solutions	
8	Contribute to Case Studies	
Total		100.00%



In this study guide, each major content area is reviewed with both a topic summary and provision of sample questions for each area. In the explanatory narrative within each subheading, specific duties, tasks, and steps you need to know about will be called out in **bold type**. Wherever possible, this document also provides the necessary knowledge, skills, abilities, and attributes required to conduct a specific task, as well as links to IAB and industry resources for reviewing them.

The organization of this study guide is to help you prepare for the exam. This organization begins with a review of data policies and its role in the creation of new data solutions. The next sections detail the management of existing data solutions and integrating data into them, as well as managing partner relationships and the data supply.

A. Establishing Data Policies

1. Define Policies
2. Perform Risk Assessment
3. Define Steps to Obtain Compliance
4. Make Solutions Compliant
5. Communicate & Educate Teams on Policy Compliance
6. Monitor and Audit Products for Ongoing Policy Compliance

B. Creating Data Solutions

1. Evaluate Opportunities – Scanning the Environment
2. Evaluate Opportunities – Prioritizing Initiatives
3. Define Product Requirements & Success Criteria
4. Perform Feasibility Analysis
5. Set Internal and External Expectations
6. Determine Go-to-Market Strategy
7. Assess Customized Solution

C. Integrating First & Third-party Data

1. Evaluate Data Sources
2. Select Data Sources
3. Scope Technical Integration
4. Ingest Data
5. Manage Data QA & Validate Data Integrity
6. Enrich Data

D. Managing Partner Relationships

1. Evaluate and Select Data Partners
2. Negotiate Data Contracts
3. Report on Delivery Data



E. Managing Data Supply

1. Monitor & Maintain Data Integration
2. Contribute to Case Studies
3. Calculate and Execute Pay-outs
4. Monitor and Optimize P&L



3 | SPECIALIZED KNOWLEDGE

Data Professionals rely on processes and systems that manage the collection, enrichment, analysis of data to improve yield, margin and/or ROI associated with digital advertising. The specialized knowledge Data Professional's possess covers multiple functions within a company. Accordingly, Data Professionals can operate within many different departments on an organization. The table below illustrates the typical departments and their responsibilities as it pertains to creating data solutions and optimizing their success.

	Establishing Data Policies	Creating Data Solutions	Integrating First and Third-party	Managing Partner Relationships	Managing the Data Supply
Legal	X				
Product Management	X	X	X	X	X
Engineering		X	X	X	X
Business Development		X	X	X	X
Customer Success		X			X
Sales & Marketing		X			X
Finance		X			X

Regardless of which department a Data Professional works in, that individual must possess a broad base of knowledge about all of the other steps in the supply chain of delivering data solutions. Effective Data Professionals typically share a common set of skills, abilities, attitudes, and resources to do their jobs, albeit with a different focus depending on which department they work in.

The best starting point for studying for the DDSC exam is by reviewing these consolidated lists of specialized knowledge, skills, abilities, attitudes, and resources of successful Data Professionals. Some test questions may specifically assess your familiarity with these topics, and all test questions have been written assuming that you already have a command of them.

Subsequent sections of this Study Guide and the Detailed Content Outline in Appendix A map specific items against content areas of the exam. In this section these items are consolidated for your convenience.

Appendix C details more information about:

- Specialized knowledge
- Skills and Abilities
- Tools, equipment and Resources
- Key terms and acronyms used by data professionals

STUDY GUIDE



Also note that you will not be permitted to bring a calculator into the testing center, but you will have access to an electronic calculator on the computer on which you take your exam, should the need arise.



4 | TOPIC SUMMARY

A. ESTABLISHING DATA POLICIES

Both industry self-regulatory guide lines and legislation govern the appropriate uses of data. After policies are established, existing software and workflows must be assessed for compliance and any appropriate remediation actions undertaken. To aid in ongoing compliance, staff must be notified of the policies and educated on how they apply to the business. Often third-party auditing services are also used to help ensure continued compliance.

Topic Review

Define Policies. Companies must ensure their data access and use policies are updated to protect both consumers and themselves against infringement of industry self-regulatory guidelines and violation of applicable legislation.

The below list identifies some of the most prominent industry organizations focused on data policies:

- American Association of Advertising Agencies (4A's) | aaa.org
- Digital Advertising Alliance (DAA) | aboutads.info
- Digital Content Next (previously Online Publishers Association (OPA)) | digitalcontentnext.org
- Interactive Advertising Bureau (IAB) | IAB.com
- Mobile Marketing Association (MMA) | www.mmaglobal.com
- Network Advertising Initiative (NAI) | networkadvertising.org

The following list outlines some of the most frequently referenced legislation:

- CAN-SPAM Act
- Children's Online Privacy Protection (COPPA)
- Gramm-Leach-Bliley Act (GLB)
- Health Insurance Portability and Accountability Act (HIPAA)
- Video Privacy Protection Act (VPPA)

Given the need to interpret legislation, the legal team often chairs the committee to create, update and communicate the company's data policies. As a first step, existing corporate policies should be compared against industry best practices. This requires knowledge of the various types of data (e.g.,



audience, contextual, geographic, as well as technographics related to the device, software and type of Internet access). Secondly, this requires an understanding of the categories within each data type (e.g., health, financial, pharmaceutical, etc.) as well as the differences among various identifiers (e.g., anonymous, personally identifiable information (PII), brand identifiable, etc.). Finally, this requires an understanding of who within the organization accesses the types and categories of data as well as which external parties have access to this data. Data Professionals outside of the legal team often help ensure the policies are written to address all access and use cases, since a single team member may not have complete understanding across all devices, applications and workflows in use by the entire organization. As companies enter new geographic market and launch new data solutions, these must be assessed against existing policies and either the data solution or policy must be adjusted as necessary.

Perform Risk Assessment. After the company's data policies have been established and after each update, the company should perform a risk assessment. In the course of working with data, Data Professionals must often assess the risks associated with particular data usage. For example, is the use of this data for optimization allowed under the contract with the data provider? The risk associated with a particular use, need not pertain to legal issues. For example, will the application of additional audience data provide incremental ROI for a campaign? Sometimes the risks are not associated with financial or contractual issues, but public perception. A successful Data Professional must have a solid understanding of cost-benefit analysis techniques, contractual language, data security and handling practices, and marketing communications.

The NAI have published a set self-regulatory guidelines for OBA within their *NAI Code of Conduct (2013)* which can be downloaded here: https://www.networkadvertising.org/2013_Principles.pdf and extensions for mobile data can be downloaded here: http://www.networkadvertising.org/mobile/NAI_Mobile_Application_Code.pdf (2013).

The IAB, 4A's, NAI, MMA among others have published a set of *Application of self-Regulatory Principles to the Mobile environment (July 2013)* which can be downloaded here: http://www.mmaglobal.com/files/whitepapers/DAA_Mobile_Guidance.pdf

The IAB, 4A's, NAI, MMA among others have published guidance on how to communicate to consumers why they receive online behavioral ads in the *DAA Icon Ad Marker Creative Guidelines* which can be downloaded here: http://www.aboutads.info/resource/download/DAA_Icon_Ad_Creative_Guidelines.pdf, with extensions for Mobile markers here:



http://www.aboutads.info/resource/Ad_Marker_Guidelines_Mobile.pdf (April 2014)

Define Steps to Obtain Compliance. Analysis of a solution or new market expansion against corporate policies may require a data solution to be altered to bring the company back into compliance. Despite best efforts, sometimes issues are found with current workflows or in software design. Remediation may require changes to workflow practices or to changes in software code. The successful Data Professional will have a solid understanding of data flows between internal and external systems as well as understand who within their organization is responsible for instituting any changes that must be made to bring the company back into compliance. The first step in remediating an issue is documenting what changes are required to bring the company back into compliance. The next step is to identify the resources required to make the necessary changes. Finally the Data Professional must set appropriate internal and external expectations about the timeline for remediation.

Ensure Compliance – Communicating and Educating. To ensure ongoing compliance with current data policies, Data Professionals should ensure the appropriate department (e.g., legal, product or marketing) communicates the company’s data policies and ensures staff understand what are the company’s data collection and usage policies. This often entails educating employees who may be less familiar with particular restrictions on appropriate access and use of data as documented in the company policy. Data Professionals often help draft, communicate and train the rest of the organization on these policies. The successful Data Professional must have solid writing skills to communicate in simple language how internal and external parties may access and use particular types of data. Setting appropriate customer and partner expectations is also important to ensure ongoing compliance.

Ensure Compliance – Monitoring and Auditing. Another step in ensuring ongoing compliance with corporate policies, and underlying industry self-regulatory guidelines and applicable legislation, is to form an internal compliance committee or hire third-party auditors to review the company’s data solutions. This requires solid communication, moderation, leadership, and project management skills. Monitoring compliance often entails working with third-party auditing and monitoring companies in addition to investigating data usage with company staff. The diagnostic output from this monitoring and investigation produces an analysis of gaps, for which the Data Professional must help prioritize appropriate remediation (see above).

Once a company’s existing solution set has been audited against the company’s data access and use policies, and any remediation actions have been completed, the creation of new products will often



entail a subsequent review and risk assessment. A regular audit process will also ensure that company's access and use policies adapt to emergent technologies and new industry regulations.

See the next page for 2 sample questions related to establishing data policies, assessing risk and ensuring compliance.



Sample Questions: Section A

Correct answers and discussions on these sample questions may be found in Appendix B.

- 1) The Digital Advertising Association principle that regulates the use of an “opt out” is
 - A. data security.
 - B. transparency.
 - C. accountability.
 - D. consumer control.

- 2) Participation in which online privacy program allows entities to use the *Advertising Option Icon* to represent adherence to the self-regulatory principles for online behavioral advertising?
 - A. IAB
 - B. NAI
 - C. DAA
 - D. Safe Harbor



B. CREATING DATA SOLUTIONS

The IAB Companies always have more opportunities to pursue than the resources required to create matching data solutions. Prioritizing among the various options requires a thorough understanding of the market and industry trends, technology trends and client demand. Once expectations have been set and the solution created, staff and customers must be appropriately trained.

Topic Review

Evaluating Opportunities – Scanning the Environment. The Data Professional’s understanding of industry trends, customer needs and competitive offerings is crucial to prioritizing company resources. By reading industry publications, attending conferences and meeting with prospects and customers, the Data Professional can make more informed decisions on prioritization. Selecting particular customer segments for whom to create data solutions is crucial in determining the appropriate scope and feasibility of success. In addition to ensuring availability, quality and compliance with existing data collection and use, the Data Professional must understand the general advertising technical ecosystem as well as emerging trends in customer demand. This role helps companies keep abreast of new developments in data syndication opportunities (e.g., cross-device syndication) and targeting tactics (e.g., new device types made available via the Internet-of-Things). A solid understanding of syndication tactics (e.g., client-to-server and server-to-server techniques) and typical match rates and issues with data transfer is important in providing guidance during media planning and execution of data-targeted campaigns. Data Professionals should also understand how customers will measure the success of the data solution and compare it to rival offerings. This entails a good knowledge of key campaign metrics (e.g., CTR, CPA, eCPC, eCPA) as well as attribution methodologies.

The IAB website provides overviews of ad-enabled “emerging platforms” such as audio, video- , and user generated content at: <http://www.iab.net/guidelines/508676/1488> and insights at: <http://www.iab.com/insights>.

Further information on particular companies can be found at:

- Crunchbase <https://www.crunchbase.com>
- LumaScape <http://www.lumapartners.com/resource-center/lumascales-2>
- VentureBeat Profiles <http://www.vbprofiles.com>

Further information on industry trends and companies can be found in paid research reports from eMarketer, Forrester, Gartner, IAB and Winterberry.



Evaluating Opportunities – Prioritizing Initiatives. The function of prioritizing which opportunities to evaluate and build often sits with product management. When evaluating opportunities for enhancing or offering new data solutions, it is important to seek input from multiple different functions within the organization. Data Professionals outside of product management provide useful insight from their area of expertise within the organization (e.g., legal, finance, engineering, business development, sales, marketing and customer success). It is also important to meet with prospects and customers to further vet the assumptions about client demand for the proposed initiative. Each opportunity will have a different cost and benefit, as well as degree of risk associated with execution. Some common benefits are revenue from new customer adoption, incremental revenue from customer retention and improved satisfaction, greater profitability through enhanced efficiency and employee development. Sometimes these data products are built using only internal data and resources. More often, these data products rely on one or more third-party partners to enhance the company’s offering. Since companies often have multiple competing initiatives that rely on the same resources, product managers must prioritize which initiatives to work on first. The output of this evaluation process is a prioritized list of approved initiatives for the company to bring to market. Based on the skills required to deliver the various initiatives, input from engineering managers can also impact this prioritization. Keeping a list of backlog of evaluated opportunities as well as rejected initiatives is useful in communicating the decision as to which solutions the company will seek to bring to market in the longer term.

Define Product Requirements and Success Criteria. A critical step to ensure the company builds the right product and builds it right is to define the requirements, dependencies and expected outcomes from the initiative. Many companies call this document is called a product requirements document (PRD) or business requirements document (BRD), while some rely on less formal collections of user stories that illustrate the requirements. Some companies following the Agile development methodology, breakout specific tasks within a PRD into more detailed user stories that engineering can then develop in multiple releases, called “sprints.” Regardless of the documenting approach the requirements document should define the minimally viable solution that must be created before customers are exposed to the product. The document content and specific use stories should be reviewed with target users and externally facing teams. One of the most important sections of the PRD is defining the success criteria—that is, the criteria to know both when the teams are done with a specific release as well as the intended outcome.

Perform Feasibility Analysis. Feasibility analysis involves a resource and technical examination of the internal systems and third-party integrations (e.g. deployment platforms, APIs, etc.) required to bring the initiative to market. Oftentimes prototypes and beta tests of third-party technologies are



used to further understand the limitations of new technologies required to support the initiative. Conducting the feasibility analysis involves a thorough understanding of the capabilities, benefits, risks, technical requirements, and organizational impacts of the new initiative. The limitations on data access and use can also impact the feasibility of the new initiative. With this understanding of the scope and feasibility, the initiative can be approved for development. Even after the initial decision to invest in a given data solution, should issues during the investigation stage significantly reset the expected benefit associated with the investment the initiative may be delayed or postponed. Once the initiative has been scheduled the product roadmap should be updated to help set timing expectations for access to the new data solution.

Set Internal and External Expectations. Once the project has been approved, and resources assigned, the project schedule and delivery timelines should be communicated. Detailing any dependencies that may delay this schedule is important in ensuring appropriate expectations are set internally and externally. Finance and sales will then update financial forecasts based on the value of this new data product in increasing spend from existing customers and attracting new customers to the company's offering. Regular updates of development progress help keep the company aligned as to the enhanced solutions the company can sell and support. Should unexpected delays or accelerations in timing occur during the development stage, either scope or timeline should be adjusted, and these change communicated.

Determine Go-to-market Strategy. Once the solution is ready to launch from a product development perspective, there are a series of go-to-market tasks within other functions required to successfully sell and support the product. Data Professionals should also determine the appropriate go-to-market strategy (e.g., train internal teams, identify beta customers, develop the positioning, marketing collateral and public announcement). At this stage, Data Professional responsible for the solution should ensure the company departments update any contracts, pricing terms and distribution channels required to achieve the forecasted KPIs. After launch of the product, feedback from internal teams and external users should be gathered to improve the delivered solution. An important use of this feedback is the creation of case studies to illustrate the value of the solution for particular types of customers.

Assessing Customized Solutions. Often customers request companies to provide solutions beyond the company's current capabilities. Similar to defining new products, the first step is to determine and document the requirements being requested as well as perform a cost-benefit analysis. Unlike defining new products, some data solutions (e.g., an analysis) can be provided to customers by a services organization rather than engineering the solution. Other data solutions are built solely for the



benefit of a large, single customer. If the solution will only be used and benefit a single customer it is a customized solution. The process for creating custom solutions is analogous to that used to create standard solutions (e.g., identify success criteria, perform feasibility analysis, schedule resources, etc.). Once the decision has been made on whether to provide the custom solution, a Data Professional must be able to provide certainty back to the customer, as to whether to the company will satisfy the customer request or help them find another vendor who can.

See the next page for 2 sample questions related to creating data solutions.

Sample Questions: Section B

Correct answers and discussions on these sample questions may be found in Appendix B.

3) Which of these is unique to iOS tracking measurement?

- A. IDFA
- B. Device ID
- C. 1st party cookie
- D. User Agent String

4) A vendor is evaluating whether to rent or build a product capability and has these costs:

	Rent	Build
First Time Startup Fee	\$1,500,000	\$4,000,000
Variable Cost for Impressions (CPM)	\$1.50	\$0.50

How many impressions does the vendor need to sell to make building the new product capability more cost efficient than renting?

- A. 20 billion
- B. 5 billion
- C. 30 billion
- D. 40 billion



C. INTEGRATING FIRST AND THIRD-PARTY DATA

Data Professionals must select, integrate, and validate the ingestion of data when creating data solutions. After ingestion, data is often enriched via a classification process or mapping imported data to existing taxonomies. Establishing a monitoring process ensures that the continued integrity and volume of data is imported as technologies and infrastructure evolve.

Topic Review

Evaluate Data Sources. The requirements document that describes the data solution can help specify the parameters of the type of data to be integrated. Data may come from within the company, called first party data or outside the company, called third-party data. Data may be updated at different frequencies depending on how it may be used in the data solution (e.g., analytics, targeting, optimization, personalization, etc.). Within these parameters, Data Professionals must decide on where to source particular data to augment existing or support the creation of new data solutions.

Select Data Source. Once the decision on the type of data required is made, particular internal source systems or vendor selection must be determined. When selecting a data source, the Data Professional must understand the policy, technical and operational issues associated with the ingestion and enrichment of the data. The Data Professional must understand the potential sources and ownership related to various types of data. Moreover, the Data Professional must understand as the restrictions on particular uses due to legislation, industry-self-regulatory guidelines and corporate policies. To ensure appropriate use, Data Professionals must also understand the accuracy and quality of data, that requires an understanding of whether the data is declared or inferred, as well as deterministic or probabilistic. When comparing different vendors of similar data, it is useful to conduct a cost-benefit analysis of volume, overlap, quality, and price. Evaluating data quality often requires in-depth knowledge of spreadsheet software and/or database languages (e.g., SQL). In addition, Data Professionals should have a solid understanding the technical limitations of data able to be sourced from various Internet connections (e.g., LTE vs. WiFi), devices (e.g., desktop vs. set-top box) and software (e.g., mobile web vs. mobile application). Once data is unified within the advertising platform, Data Professionals often guide the segmentation, look-alike modeling, extension, and generation of specific taxonomies that create more data aggregates.

Scope Technical Integration. Operational issues are less likely to occur when engineering and operations team are involved from the start to determine processing and storage needs based on data volumes. For both internal and external integrations, technical members associated with the source and destination systems should communicate about the expected file naming conventions, security



schemes, transfer mechanisms, file structures, field and data formats as well as expected update frequencies. Data transfer may be aggregated or at the event-level. Data can be transferred per event or in batch, where multiple events are sent in a single transfer. The transfer mechanism can be client-to-server or server-to-server. A common example of event-level, client-to-server transfer is using beacons (also called pixels, when using an image request, or tags, when using javascript) to send information from one system to another. Data Professionals should understand the required update frequency of refreshing and augmenting data in support of the data solution. This entails a good knowledge of various methods of data transfer (e.g., server-to-server, client-to-server, batch file and real-time). Once both technical teams agree on the technical feasibility of the integration and required resources from both teams, an integration schedule should be created to set appropriate expectations.

Ingest Data. Once the technical integration has been agreed to, common keys to match incoming data to existing data needs to be determined. For user-level data, ID synching is often performed via tags. An IAB whitepaper entitled *Site Tagging Best Practices* provides context around these and other marketing tags that need to go through a quality assurance check as part of the regular workflow process (see http://www.iab.net/media/file/SiteTaggingBP_final.pdf). The match rate of the common keys between the source and destination systems should be measured as a check that the solution is working as expected.

Manage Data QA & Validate Data Integrity. Once the technical details of data transfer have been agreed to by both companies (e.g., ID synchronization, APIs, encryption, file format, delimiters), it is essential to perform the appropriate QA of the initial data transfer. This entails checking for verifying the completeness of data transfer, as well as accuracy of the transferred data (e.g., missing information, duplication, misconfigured data formats). Specific data filters may also be applied at this phase (e.g., excluding non-human traffic). If any issues occur, proper communication is required to keep all parties informed of the remediation progress.

Enrich Data. The data from the source system often needs to be transformed for particular formats and uses within the destination system. Examples of data transformations include: currency rate, and data format. Sometimes the data must also undergo filters and cleansing (e.g., eliminating non-human traffic) before it is used by the company's systems. Moreover, after the source data has been successfully loaded into the destination system, it must be further enriched before it is useful to end users. For example, categorizing site-activity data into a simplified groups (e.g., sports, finance, entertainment) reduces the number of distinct attributes in the system while also increasing the shared volume of activity in the aggregate category.

STUDY GUIDE



An overview of common web debugging tools can be found here:

<http://support.brightcove.com/en/video-cloud/docs/tools-used-ad-ops-team#http-trace>.

See the next page for 2 sample questions related to creating data solutions.



Sample Questions: Section C

Correct answers and discussions on these sample questions may be found in Appendix B.

- 5) What enables two parties to share anonymous browser-based identifiers so that both can address or measure against the same audience?**
- A. Cookie synch
 - B. Data taxonomy
 - C. Hashing algorithm
 - D. Look-alike modeling
- 6) Which piece of data is MOST persistent on a mobile device?**
- A. UDID
 - B. Cookie
 - C. Lat/Long
 - D. User Agent



D. MANAGING PARTNER RELATIONSHIPS

Data Professionals must evaluate specific vendors against business needs (e.g., defined in the requirements documents), assess the feasibility of integrating the vendor, negotiate the data contract and manage the ongoing relationship. Data Professionals must also report metrics back to the data vendors for billing purposes and to help improve the overall data solution.

Topic Review

Evaluate and Select Data Partners. Once the company has decided what data solutions to augment or build, and what data is required to make them successful, the next step is determine which vendors should be selected to supply this data. Sometimes this decision is specified within the product requirements phase, especially when analyzing feasibility and evaluating the cost-benefit of investing in the data solution initiative. However, for some data solutions additional data vendors may be integrated without requiring a change to requirements of the data solution (e.g., onboarding additional CRM data to a DMP, ingesting a new publisher's inventory into an exchange, ingesting another audience vendor into a DMP).

Vendor selection is extremely important. Beyond pricing differences, data partners often have regional specialties, and differentiate not only on quality of their data, but level of service they can provide. The appropriate comparison of capabilities, cost and risk should be conducted during the selection process.

Often companies will choose only to integrate vendors and partners that have been certified by various industry compliance organizations. Certification requires that vendors submit technical and process information to the compliance organization that demonstrates adherence to industry self-regulatory guidelines and legislation. A list of IAB compliance programs can be found here:

http://www.iab.net/guidelines/compliance_programs.

Negotiate Data Contracts. While one party often leads negotiations, many departments must be kept informed. Often the legal department will augment the negotiations with data companies being led by the general manager, product or business development person. The first step of negotiation is determining which companies' contract will be used to define the contract terms. Data Professionals must have knowledge of the common legal clauses (e.g., confidential information, indemnity, term and termination). One of the most important portions of the contract is the definition of billing terms (e.g., what is the basis for payment, how frequently, which currencies will be used, audit rights and discrepancy management). In addition to basic contract knowledge, Data Professionals must have strong negotiation skills to ensure that the terms of the contract align with company's business goals.



Once legal and other stake holders have approved the terms of the contract it must be executed with appropriate signatures from both entities.

Report on Delivery Data. Often the company offering the data solution also collects the metrics upon which the data vendor will be paid. The KPIs for a data vendor and the company operating a data solution reliant on that vendor may differ. For example, the number of advertisers using the company operating the data solution or its margin may not be disclosed to the data vendor. Accordingly, the Data Professional may need to generate different reports that provide these metrics for internal and external audiences.

See the next page for 2 sample questions related to managing partner relations.



Sample Questions: Section D

Correct answers and discussions on these sample questions may be found in Appendix B.

- 7) Which contract clause provides protection by a 1st party to a 2nd party against 3rd party claims, based on 1st party actions?
- A. Direct damages
 - B. Indemnifications
 - C. Mutual consideration
 - D. Service Level Agreement
- 8) Which of the following items is NOT typically a component of an SLA?
- A. Minimum server uptime
 - B. Maximum server latency
 - C. Minimum impression volume
 - D. Minimum support response time



E. MANAGING DATA SUPPLY

Most solutions are used for much longer than it takes to build them. Thus, monitoring KPIs and identifying how to grow adoption of the solution is important to maximizing the return on the initial investment. Also important is monitoring the data volumes and SLAs of vendor data that enrich a data solution. Documented examples of existing customer success within case studies are often used to attract new customers. To ensure uninterrupted flows of data from vendors, the accounts payable department must ensure that these vendors are paid per the contractual terms. As the volume of adoption grows this uncovers opportunity to extend both the utility and efficiency of the data solution.

Topic Review

Monitor & Maintain Data Integration. To ensure the success of a data solution, it is important to establish ongoing monitoring processes. This entails ongoing checks for file completeness and changes in file contents over time. Benchmarks of historical data volumes are often used to identify anomalies in the most recent data transfer. Moreover, Data Professionals may often monitor fluctuations in the volume of data being transferred between the companies to identify if any errors crop up after the initial integration. Skills to monitor and data supply require a basic understanding of internet languages, services and protocols (XML, HTML, JSON), and reporting and analytic tools (e.g., website analytics, database, spreadsheet software). Oftentimes whether an anomaly is actually a signal of an issue or an unusual, but natural fluctuation in normal data flows requires investigation. The severity of the potential issue should determine the attention it receives to resolve which of the two cases the anomaly falls into. Should an actual issue occur, the communication of the impact of these errors should be communicated internally to reset expectations with customers, as well as externally with the data partners to remediate the issue. Based on the nature of the issue there may be business impact that may also need to reset financial expectations. After an issue has been resolved, a post mortem process will document the resolution steps to enable easier troubleshooting and remediation in the future, as well as any investments to reduce the chance of its reoccurrence.

Document Bugs, Workarounds, and Enhancement Requests. Once customers begin using a data solution they invariably identify issues. Sometimes these issues are errors in the code, while other times they are misunderstandings of what the solution does or does not do. Data Professionals must differentiate the former (i.e. bugs) from the later (i.e. enhancement requests). Both types of issues need prioritization, which is usually performed by the product management organization. The Data Professional should be very knowledgeable about the company's escalation path for expediently addressing high priority issues. For some requests Data Professionals can provide workarounds to accomplish tasks not envisaged during the development of the original solution.



An overview of common web debugging tools can be found here:

<http://support.brightcove.com/en/video-cloud/docs/tools-used-ad-ops-team#http-trace>.

Contribute to Case Studies. By enrolling a subset of customers in the roll out of new initiatives, often called a “beta” period, Data Professionals can gather useful feedback. Some of this feedback will be used to enhance the product (e.g., remediate bugs, document workarounds and identify feature requests). One of the most valuable aspects of beta is collecting user feedback that will be used by the marketing team to development sales collateral. These case studies about how the data solution contributes to these clients’ success are used to attract additional, similar clients.

Calculate and Execute Pay-outs. After partner contracts have been signed and the data is being used, the company’s finance team must begin abiding by the commercial terms of the contract and sending the appropriate invoices and payments. The Data Professional usually will access reports associated with these payments to monitor and optimize the profit and loss of the particular data product for which they are responsible. These reports will record units of measure, pricing terms, revenues and cost by partner.

Monitor and Optimize P&L. Often finance will help the Data Professional analyze the data to create forecasts of future profit and loss, as well as identify what actions can be undertaken to improve the positive impact of this data product (e.g., focus sales and customer success on particular customer segments or customers, focus ad operations on using more of one vendor’s data over another, work with the partner to send additional data). When data from certain partners does not meet expectations, the Data Professional must re-evaluate whether to adjust the contract terms or in some cases wind down the relationship. Thus the successful Data Professional will have solid understanding of the business drivers and spreadsheet software skills to perform the requisite analysis. The profitability analysis can also highlight when a given product or feature should be scheduled to be phased out (or sunsetted), which in certain cases can increase customer satisfaction and enable the company to focus its resources on more profitable initiatives.

See the next page for 2 sample questions related to managing the data supply.



Sample Questions: Section E

Correct answers and discussions on these sample questions may be found in Appendix B.

9) What does the statement “5% 15, Net 45” mean?

- A. 5% of the invoice is due within 15 days, but the full invoice is due within 45 days
- B. 5% discount if paid in the first 15 days, but the full invoice is due within 45 days
- C. 5% penalty if the bill is not paid in full within 45 days with 15 day grace period
- D. 5% of the invoice is due within 15 days with 45 days to pay the remaining balance

10) When using multiple 3rd party data segments, why would segment-level impression volume appear to be inflated compared to overall campaign impression volume?

- A. audience overlap
- B. inaccurate reporting
- C. platform synch delays
- D. ad server discrepancies

Appendix A | Detailed Content Outline

Outline of Duties, Tasks and Steps

A. Establishing Data Policies

1. Define Policies
 - i. Review current legislation
 - ii. Review industry regulations and standards
 - iii. Review company's access and use of data
 - iv. Assess and adjust corporate policies
2. Perform Risk Assessment
 - i. Evaluate if data solution fits into existing policy
 - ii. Evaluate financial & legal impact of non-compliance
 - iii. Determine public perception (PR) Risk
3. Define Steps to Obtain Compliance
 - i. Perform gap analysis for each data solution
 - ii. Identify any remediation steps
 - iii. Identify any remediation resources
 - iv. Set expectations on remediation timeline
4. Make Solutions Compliant
 - i. Execute technical or process fix
 - ii. Validate fix
5. Communicate & Educate Teams on Policy Compliance
 - i. Create policy documentation for teams
 - ii. Conduct training on policies
 - iii. Provide internal and external updates on policy changes
6. Monitor and Audit Products for Ongoing Policy Compliance
 - i. Assess internal corporate data access and use practices
 - ii. Assess external partner data access and use practices
 - iii. Select third-party auditor(s)
 - iv. Conduct third-party review

B. Creating Data Solutions

1. Evaluate Opportunities – Scanning the Environment
 - i. Identify market and industry trends
 - ii. Identify technology trends
 - iii. Define target customer segment
 - iv. Identify client demand
2. Evaluate Opportunities – Prioritizing Initiatives
 - i. Seek input from different functions within the organization
 - ii. Meet with prospects and partners
 - iii. Conduct Cost/Benefit Analysis
 - iv. Prioritize initiatives to invest in
3. Define Product Requirements & Success Criteria
 - i. Define scope and detailed requirements
 - ii. Solicit feedback on requirements
 - iii. Define KPIs to measure success
4. Perform Feasibility Analysis
 - i. Estimate required resources, data and technologies and their associated costs



- ii. Review solutions access and use needs against applicable policies
- iii. Obtain approval on scope
- iv. Schedule initiative and update roadmap
- 5. Set Internal and External Expectations
 - i. Communicate scope of solution
 - ii. Communicate timelines, resources and dependencies
 - iii. Communicate budget and financial forecast
 - iv. Communicate progress
- 6. Determine Go-to-Market Strategy
 - i. Create positioning and marketing collateral
 - ii. Update pricing, contracts and distribution channel
 - iii. Train operational and client facing teams
 - iv. Identify beta customers
- 7. Assess Customized Solution
 - i. Conduct Cost/Benefit Analysis
 - ii. Define Product Requirements & Success Criteria
 - iii. Perform Feasibility Analysis
 - iv. Set Internal and External Expectations

C. Integrating First & Third-party Data

- 1. Evaluate Data Sources
 - i. Identify type of data required
 - ii. Identify potential sources of data
- 2. Select Data Sources
 - i. Compare costs and benefits of each data source
 - ii. Ensure data sources comply with company policies
 - iii. Compare costs and benefits of each data source
 - iv. Prioritize integration of data sources
- 3. Scope Technical Integration
 - i. Ensure communication between technical teams of data sender and receiver
 - ii. Determine method of data synchronization and transfer (e.g., batch, pixel, server-to-server, client-to-server)
 - iii. Determine frequency of data transfer & document SLAs
 - iv. Determine expected data volumes & capacity implications
 - v. Validate feasibility of integration against the initiative's requirements
 - vi. Set expectations on timeline
- 4. Ingest Data
 - i. Ensure ID synch between source and destination systems (e.g., tags)
 - ii. Load and match incoming data to data store schema and primary keys
 - iii. Identify match rates
- 5. Manage Data QA & Validate Data Integrity
 - i. Validate success of data transfer (e.g., file formats, sizes & data formats)



- ii. Remediate any issues (e.g., deduplicate, filter non-human traffic)
- 6. Enrich Data
 - i. Transform and filter data
 - ii. Augment data with user segmentation or site classification

D. Managing Partner Relationships

1. Evaluate and Select Data Partners
 - i. Identify potential data partners
 - ii. Compare accuracy, volume, cost and risks associated with each partner
2. Negotiate Data Contracts
 - i. Determine which company's contract will be used
 - ii. Define and agree on terms
 - iii. Obtain signoff
3. Report on Delivery Data
 - i. Define KPIs
 - ii. Measure and disseminate performance by KPI

E. Managing Data Supply

1. Monitor & Maintain Data Integration
 - i. Establish monitoring process
 - ii. Audit data volumes and SLAs
 - iii. Troubleshoot any anomalies and remediate any issues
2. Contribute to Case Studies
 - i. Solicit feedback from partners and customers of benefits of data solution
 - ii. Document examples of success
3. Calculate and Execute Pay-outs
 - i. Review contract for terms and contacts
 - ii. Compare metrics on data use and apply to contractual terms
 - iii. Send invoices or payments
4. Monitor and Optimize P&L
 - i. Record revenue and costs
 - ii. Analyze revenue and costs
 - iii. Forecast revenue and costs
 - iv. Prioritize adjustments to partners, technical investments and workflow to improve ROI

Appendix B | Answers to Sample Questions

Section A: Establishing Defining Data Policies

Question 1	Content Area: A) Establishing Data Policies
The Digital Advertising Association principle that regulates the use of an “opt out” is	
A. data security.	Data security protects against unauthorized access.
B. transparency.	Transparency of data collection and use is a key privacy principle within the industry’s self-regulatory guidelines.
C. accountability.	Accountability is not related to a the opt out process.
D. consumer control.	Consumer control is a key privacy principle within the industry’s self-regulatory guidelines, which ensures consumers can opt-out of interest based advertising.

Question 2	Content Area: A) Establishing Data Policies
Participation in which online privacy program allows entities to use the <i>Advertising Option Icon</i> to represent adherence to the self-regulatory principles for online behavioral advertising?	
A. IAB	The Internet Advertising Bureau (IAB) is an advertising business organization that develops industry standards, conducts research, and provides legal support for the online advertising industry.
B. NAI	The Network Advertising Initiative (NAI) is a group of third party network advertisers who are committed to increasing consumer confidence and contributing to the growth of electronic commerce.
C. DAA	The Digital Advertising Alliance (DAA) is a consortium of the leading national advertising and marketing trade groups that together deliver effective, self-regulatory solutions to online consumer issues. They manage the web site, www.aboutads.info, where companies can now register to use an enhanced notice icon (the “Advertising Option Icon”) to be displayed within or near online ads or on Web pages where data is collected and used for interest-based ads.
D. Safe harbor	Safe harbor is a principle by which certain conduct will be deemed not to violate a given rule.

Section B: Creating Data Solutions

Question 3	Content Area: B) Creating Data Solutions.
Which of these is unique to iOS tracking measurement?	
A. IDFA	The identifier for advertisers (IDFA) is on mobile and Apple TV.
B. device ID	Device IDs are present on other devices other than those running iOS (e.g., connected TV)
C. 1 st party cookie	Cookies are not unique to iOS.
D. user agent string	User agent strings are not unique to iOS.

Question 4	Content Area: B) Creating Data Solutions.	
A vendor is evaluating whether to rent or build a product capability and has these costs:		
	Rent	Build
First Time Startup Fee	\$1,500,000	\$4,000,000
Variable Cost for Impressions (CPM)	\$1.50	\$0.50
How many impressions does the vendor need to sell to make building the new product capability more cost efficient than renting?		
A. 20 billion	Please see math formula for correct answer.	
B. 5 billion	(4,000,000 - 1,500,000) = \$2.5 million delta between building and renting. The vendor would need to sell an incremental 5 billion impressions (2,500,000 / 0.5 *1000) to cover this delta in cost.	
C. 30 billion	Please see math formula for correct answer.	
D. 40 billion	Please see math formula for correct answer.	

Section C: Integrating First and Third-party Data

Question 5	Content Area: C) Integrating First and Third Party Data
What enables two parties to share anonymous browser-based identifiers so that both can address or measure against the same audience?	
A. cookie sync	Also referred to as an ID synch, this technique passes identifiers from each party so that they can subsequently transfer data asynchronously.
B. data taxonomy	Data taxonomies are used to organization audience or site information.
C. hashing algorithm	While a hashing algorithm could modify the party's ID before it is passed, this is not the name for the process of synchronizing identifiers.
D. Look-alike modeling	Look-alike modelling is used to find similar audiences to a seed audience pool, but this is not the name for the process of synchronizing identifiers.

Question 6	Content Area: C) Integrating First and Third Party Data
Which piece of data is MOST persistent on a mobile device?	
A. UDID	The user device ID (UDID) is least likely to rotate over time on the same device..
B. cookie	While consumers tend to clear cookies less on mobile devices than on their desktop browsers, many mobile applications do not accept any cookies and some mobile browsers block third-party cookies altogether making this identifier less persistent than the UDID.
C. lat/long	Lat/long refers to the geolocation of the device, which for mobile devices is often changing.
D. user agent	While relatively persistent, the user agent refers to the technographics associated with the transmission of data on the Internet and can change as browser and OS upgrades change making this identifier less persistent than the UDID.

Section D: Managing Data Supply

Question 7	Content Area:
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		D) Managing Partner Relationships
Which contract clause provides protection by a 1 st party to a 2 nd party against 3 rd party claims, based on 1 st party actions?		
A. direct damages	Direct damages is the difference in value received from that which was contractually promised.	
B. indemnifications	Indemnification is a contractual term that promises to “hold harmless” the other party for claims that may arise from a 3rd party.	
C. mutual consideration	Mutual consideration is the exchange of value that legitimizes a contract..	
D. service level agreement	A Service Level Agreement (SLA) defines the nature, quality, and scope of service to be provided..	

Question 8	Content Area: D) Managing Partner Relationships	
Which of the following items is NOT typically a component of an SLA?		
A. minimum server uptime	Service Level Agreements (SLAs) frequently mention availability measured by uptime (or its inverse acceptable downtime).	
B. maximum server latency	Service Level Agreements (SLAs) frequently mention server response time measured by latency.	
C. minimum impression volume	Minimum impression volumes are often required by an insertion order (IO), but are not part of Service Level Agreements (SLAs).	
D. minimum support response time	Service Level Agreements (SLAs) frequently mention response time from customer service teams, often differentiated by the severity of the issue.	

Section E: Managing Data Supply

Question 9	Content Area: E) Managing the Data Supply
What does the statement “5% 15, Net 45” mean?	
A. 5% of the invoice is due within 15 days, but the full invoice is due within 45 days	This contractual term does not refer to a partial payment.
B. 5% discount if paid in the first 15 days, but the full invoice is due within 45 days	This contractual term means that a 5% discount is applied if the bill is paid within 15 days, while the bill is due of 45 days after invoicing.
C. 5% penalty if the bill is not paid in full within 45 days with 15 day grace period	This contractual term does not refer to a penalty.
D. 5% of the invoice is due within 15 days with 45 days to pay the remaining balance	This contractual term does not refer to a partial payment.

Question 10	Content Area: E) Managing the Data Supply
When using multiple 3 rd party data segments, why would segment-level impression volume appear to be inflated compared to overall campaign impression volume?	
A. audience overlap	This is the correct answer because users will fall into more than one segment.
B. inaccurate reporting	Although this could be the case, summing totals across multiple segments will more frequently have a total larger than overall campaign volume.
C. platform sync delays	Delays in reporting can cause reporting discrepancies, but summing totals across multiple segments will more frequently have a total larger than overall campaign volume.
D. ad server discrepancies	Different ad servers will report out different counts, but summing totals across multiple segments will more frequently have a total larger than overall campaign volume.

For additional guidance, please refer to the DDSC Practice Test located on the [IAB certification website at this link](#).

Appendix C | Specialized Knowledge, Skills, Resources and Key Terms

The tables below list the specialized knowledge, skills, resources and key terms that Data Professionals are expected to know.

Specialized Knowledge

You should be prepared to demonstrate a working knowledge of all of the following digital media themes while you take the certification exam. The certification exam presumes that candidates can define and understand what is meant by the industry topics and terminology detailed here.

Specialized Knowledge	
A/B Testing	Internal Capabilities
Ad Blocker Technology	Internal Engineering Team's SLAs
Ad Formats	Internal Pain Points and Limitations
Ad Platforms	International Privacy Laws
Ad Unit Formats	Inventory Landscape or Ecosystem
Advanced Excel Resources (How To Make Pivot Tables, "Vlookup", Filtering, etc.)	Involved Platforms and Technologies
Advertiser's Data Management Platform	Legal Agreements
Age Gating Laws (e.g., COPPA)	LOE and Evaluation Processes
APIs	MRC Process
Attribution Models	Naming Conventions
Audience Attributes	New Product Development Process
Audience Data Metrics and Delivery Targeting	OBA
Audience Protocol Interface	Online and Offline Data
Audience Targeting (e.g., Demo, Geo, Interests, etc.)	Operational Deployment Processes
Auditing Methods	Operational Expectations
Baseline Economics	Operational Impacts
Basic Statistics	Operational Workflow
Basic Tag Structures (e.g., Iframe, Javascript, Gif, Standard Redirects)	Operations Surrounding Product
Billing Details	Opportunity Assessment Methodologies and Techniques
Blacklisting and Whitelisting	Overall Business Strategies
Brand Benchmarks	Overarching Client Goals
Bug Reporting and Tracking Systems	Overhead Impacts
Business and Client Impacts	Pacing
Business Ethics	Package Sunset Process
Business Impact Analysis	Packaging
Business KPIs	Partnership Status
Business Models	Past Issues
Business Priorities	Platform (Mobile, Desktop, TV, Wearable, etc.)
Buy- and Sell-Side	Presentation Tools

Specialized Knowledge	
Campaign Goals (e.g., Direct Response, Branding, Reach)	Pricing Models
Campaign Performance	Priorities
Campaign Volume (Number Of Impressions, Clicks, etc.)	Privacy Restrictions and Laws
Capacity Planning	Private Marketplaces
Client Goals	Product Availability (e.g., Whether Or Not Something Has Been Sunsetted)
Client Needs	Product Backlogs
Client Tiers	Product Capabilities
Codes (e.g., Html, Javascript)	Product Development Process
Commercial Implications	Product Dependencies
Common Contractual and Legal Terms	Product Management Processes
Company Business Goals	Product or Technology Expected Behaviors Or Functionalities
Competitive Intelligence & Landscape	Product Positioning and Offerings (e.g., What Value Is The Product Giving)
Compliance Requirements	Product Roadmaps
Content Management Systems (CMS)	Profit and Loss Goals and Metrics
Contract and Legal Process	Project Lifecycle
Contract Terms and Conditions	Project Management Processes
Contractual Obligations	Project Timelines
Conversion Windows	Rate Cards
Copyright Laws	Real-time Bidding (RTB)
Cost Benefit Analyses	Regulatory and Legislative Environment
Current Product	Relationship Management
Data Hygiene	Reporting Data Analysis
Data Lookback Window	Reporting Metrics
Data Restrictions	Reporting Refresh Cycles
Data Security and Handling	Reporting Systems
Data Structure and Warehousing	Research Vendors
Debugging Tools and Processes	Resource Allocation
Discrepancy Investigation Processes	Retargeting Goals
Documentation Needs	Revenue Models
Effective Communication Styles	Risk Analysis
Emerging Technologies	Roles and Responsibilities Of Stakeholders
Escalation Contacts	Scalability
Exception Process	Script Interpretation (e.g., Flash, Action Script, CSS, Javascript, Html)
Exclusivity	Service Level Agreements
Existing Bugs and Limitations	Site Analytics
Expected Outcomes	Site Tagging Management
Experiment Process	SLAs
Feature Enhancement Process	SMEs
Feedback Loop	SOPs

Specialized Knowledge	
File and Data Formats	SQL
Filtering	Stakeholders Or Key Contributors
Financial Influences	Standard Procedures
First, Second, and Third-Party Data	Success Indicators
Forecasting Methodologies	Supplemental Or Complementary Technologies
Fraud Detection Techniques	Supportability
Fraudulent Activity (e.g., Bots, Spiders, Crawlers)	System Up and Down Times
Gap Analysis	Tag Management Systems
General Inventory Prioritization	Tagging Capabilities
Growth Opportunities	Tagging Formats
How The Process Can Be Divided (e.g., Who Has Ownership)	Targeting Capabilities (e.g., Audience, Inventory, Technographccs)
How Third-Parties Are Using Data	Testing Processes
How To Communicate Effectively	The Digital Ecosystem and Landscape
How To Establish KPIs	The Product Lifecycle
How To Identify Key Metrics	The Trafficking Process
How To Interpret Data	Third Party Ad Servers
How To Use The Internal and External Knowledge Base	Third-Party Tag Functionality
How Training Fits Into The Bigger Picture	Tracking Capabilities Across Devices
How Vendors Source, Store, Compile, and Share Data	Traffic Fluctuations (e.g., World Events, Sporting Events, Deaths)
ID Syncing	Training Gaps and Needs
Impact Assessment Protocols	Underutilized Capabilities
Industry Benchmarks	Unit Testing
Industry Landscape (e.g., Lumascape)	User Best Practices As They Relate To Developing New Technology
Industry Restrictions	User Identification Methods (Cookie, Device Id, Ip Address)
Industry Technological Capabilities	User Identifiers (Pii Vs Non-Pii)
Industry Terminology	Vendor and/or Client Locations and Time Zones
Industry Trends	Vendor Expectations
Integration Limitations	Vendor File Requirements
Integration of APIs (e.g., Feeds)	Vendor Tags and Technical Limitations
Integration Statuses	Verification Services
Interconnectivity of The Ecosystem	Web Technologies (e.g., Html, Javascript, Iframe)

Skills and Abilities

The DDSC exam has been written for individuals who possess the skills and abilities required of digital Data Professionals, which are listed below. Note that some of the items are qualitative and unique to an individual's personality and style. All of these skills and abilities – both the qualitative and quantitative – have been identified as requirements for a successful Data Professional.

Skills and Abilities Required of Ad Operations	
Advocacy Skills	Goal-Oriented
Analytical	Identify Financial Influences
Analyze Profitability	Identify Outliers
Anticipate Problems And Issues	Identify Potential Points Of Failure
Attention To Detail	Innovative
Build a Business Case	Inquisitive
Build Mental Models	Interpret Financial Reports
Business Acumen	Investigative Skills
Calculate P&L	Manage a Budget
Capture Feedback	Manage Up and/or Down
Categorize Or Classify Data	Materialize Opportunities
Collaborate Cross-Functionally	Mathematics Skills
Collaboration Skills	Organization Skills
Communication Skills	Perform Root-Cause Analysis
Compare Competitive Set	Personal Restraint
Computer Skills	Planning Skills
Conflict Resolution Skills	Presentation Skills
Consider Assets	Prioritization Skills
Content Mastery	Problem-solving Skills
Creating Thinking Skills	Process-Oriented
Creative Problem-Solving	Project Management Skills
Creative Thinking Skills	Public Speaking Skills
Critical Thinking Skills	Read and Interpret Technical Reports
Customer Service Skills	Reconciliation Skills
Data Presentation Skills	Research Skills
Database Literate	Risk Assessment Skills
Decision Making Skills	Risk-Management Skills
Deductive Reasoning Skills	Spreadsheet Software Literate
Detail-Oriented	Technical Writing Skills
Develop Process Flow	Time Management Skills
Draft a Product Requirement Document (PRD) and Translate Business Requirements Into Technical Requirements	Translate Business Needs To Marketable Products
Financial Skills	Troubleshooting Skills
Forecasting Skills	Vendor Negotiation Skills
Foresight	Visualization Skills

Tools, Equipment and Resources

You should also be aware that DDSC exam content is mindful of an understanding of the following tools and equipment used by successful Data Professionals. Note that the exam is software-agnostic, and you will not be tested on the inner-workings of a particular technology. However, you should be familiar with the general purpose of these resources, and familiarity with how they are used.

Tools, Equipment, and Resources	
API Documentation	PRD Templates
Blacklist and whitelist	Project Management Tools
Browser and Network Interrogation Tools (e.g., Fiddler, Firebug, Ghostery or Chrome Developer)	Regulatory guidelines (e.g., HIPAA, GLB, COPPA)
Bug Tracking Tools (e.g., Jira, Pivotal, Bugzilla)	Reporting Software
Calculator	Spreadsheet Software
CRM Systems	Supply Side Platforms
Demand Side Platforms	Survey Software
IAB Data Usage And Control Primer	Tag Management Systems (e.g., Brighttag, Tagman, Pixelman)
Industry Compliance Associations (NAI, IAB, DAA, OPA, ECCO) [What Is ECCO?]	Tools For Querying Big Data
Integration Tools	Website Analytics Systems

Key Terms and Acronyms

You should familiarize yourself with the following list of key terms and acronyms.

Key terms relating to Data Attributes, User Tracking, Data Security, Data Sources, Data Manipulation, Data Use, Data Lifecycle Management and Data Transfer terms	
Anonymizing	HTTP Headers
API	Joining
Attribution	Location Data
Audience Extension	Log files
Audience Overlap	Look-alike Modeling
Beacons or Tags	Mapping
Behavioral	Merging
Bid Requests	Modeling
Bid Responses	Network Data (e.g., Carrier)
Census Data	Offline vs Online
Contextual	Panel Data
Cookies	Point-of-Sale Data
CRM	Psychographic
Cross-channel targeting	Purchase/Transactional
Cross-device targeting	Reach/Frequency analysis
Data Leakage	Sampling
Declared vs Inferred	SDK

Key terms relating to Data Attributes, User Tracking, Data Security, Data Sources, Data Manipulation, Data Use, Data Lifecycle Management and Data Transfer terms

Demographic	Server-To-Server vs Client-To-Server
Deterministic vs Probabilistic	SSL
Devices Ids	Statistical Ids
Encryption	Tags
FTP	Technographic
Geographic	Transfer Protocols
Hashing	User Registration
HTML Headers	

Acronym	Description
AAAA	American Association of Advertising Agencies
API	Application Programming Interface
AS	Action Script
ATF	Above The Fold
AV	Added Value
BT	Behavioral Targeting
BTF	Below The Fold
CDN	Content Delivery Network
COPPA	Child Online Privacy Protection Act
CMS	Content Management System
CPA	Cost Per Acquisition
CPC	Cost Per Click
CPE	Cost Per Engagement
CPI	Cost Per Install
CPL	Cost Per Lead
CPM	Cost Per Mille (Thousand)
CPV	Cost Per View
CTA	Call To Action
CTR	Click Through Rate
CTP	Click To Play
dCPM	Dynamic Cost Per Thousand
DMA	Designated Market Area
DMP	Data Management Platforms
DOOH	Digital Out of Home
DR	Direct Response
DSP	Demand Side Platform
eCPM	Effective Cost Per Thousand
FEP	Full Episode Player
FTP	File Transfer Protocol
GRP	Gross Rating Point

Acronym	Description
HTML	HyperText Markup Language
HTTP	Hyper Text Transfer Protocol
HTTPS	Hyper Text Transfer Protocol Secure
IAB	Interactive Advertising Bureau
IO	Insertion Order
IP	Internet Protocol
ISI	Important Scrolling Information
ISP	Internet Service Provider
KPI	Key Performance Indicator(s)
LDA	Legal Drinking Age
LFV	Long Form Video
LMS	Learning Management System
MRAID	Mobile Rich Media Ad Interface Definitions
MSA	Master Service Agreement
OBA	Online Behavioral Advertising
OOH	Out of Home
OPA	Online Publisher Ad
OVP	Online Video Platform
PII	Personally Identifiable Information
PO	Purchase Order
POP	Point Of Purchase
QA	Quality Assurance
rCPM	Real Cost Per Thousand
RFI	Request For Information
RFP	Request For Proposal
ROAS	Return On Ad Spend
ROI	Return On Investment
RON	Run Of Network
ROS	Run Of Site
ROV	Run Of Vertical

Acronym	Description
RPM	Revenue Per Thousand
RSS	Real Simple Syndication
RTB	Real-Time Bidding
SDK	Software Development Kit
SEM	Search Engine Marketing
SEO	Search Engine Optimization
SFV	Short Form Video
SLA	Service Level Agreement
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SOV	Share Of Voice
SOW	Statement Of Work
SRT	Search Retargeting

Acronym	Description
SSP	Supply Side Platform
SSL	Secure Socket Layer
T&Cs	Terms and Conditions
TRP	Target Rating Point
UGC	User Generated Content
UI	User Interface
VAST	Video Ad Serving Template
VMAP	Video Mobile Ad Player
VOD	Video On Demand
VPAID	Video Player Ad Interface Definition
WAP	Wireless Application Protocol
WWW	World Wide Web
XML	Extensible Mark-up Language

As a study resource for reviewing digital media terminology, the IAB has published a *Glossary of Interactive Terms*, which can be found at the following URL: <http://www.iab.com/guidelines/glossary-of-terminology>. Additionally, the *IAB Interactive Advertising Wiki* offers a glossary at iab.net/wiki/index.php/Category:Glossary.

Questions? Visit www.iab.com/datacert or email certification@iab.com.

