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Jessica L. Bailey-Wheaton, Esq., Editor
Todd A. Zigrang MBA, MHA, ASA, FACHE, Publisher

The Due Diligence Imperative: Technology
(Part 5 of a 6 Part Series)

As discussed in the first installment of this six-part series, *due diligence* generally may be defined as:

(1) "*such a measure of prudence, activity, or assiduity, as is properly to be expected from, and ordinarily exercised by, a reasonable and prudent man under the particular circumstances; not measured by any absolute standard, but depending on the relative facts of the special case*"; and,

(2) "*an investigation in order to support the purchase price of the business*."[1]

The requisite *due diligence* related to a healthcare valuation engagement is comprised of two distinct classes of information:

(1) *General research* – Research that is not specifically related to, or obtained from, the subject *enterprise*, *asset*, or *service* being appraised; and,

(2) *Specific research* – Information specific to the subject *enterprise*, *asset*, or *service*, that is typically obtained from the client or the appropriate contact designated by the client.[2]

The first part of this six-part series set forth an overview of the due diligence imperative for valuation professionals, in the context of the *Four Pillars of Healthcare Value*, i.e., *Reimbursement*, *Regulatory*, *Technology*, and *Competition*.[3] The second, third and fourth installments reviewed the due diligence process related to the *reimbursement*, *regulatory* and *competitive* environments, respectively. This fifth installment will review the due diligence process as relates to *technology* in the healthcare industry.

Technology should be construed in its broadest sense when applied to the healthcare industry. Not only does is it include the tangible tools, pharmaceuticals, and software that providers use during the provision of clinical services, but technology can also refer to the management of patient records, as well as the procedures that constitute the standardized course of care.[4]

Medical technology should not be limited to the sophisticated machinery used by doctors to treat patients and map different parts of the body, but should also encompass the complex systems used to collect, maintain and analyze patient data and various other processes. The technologies represented by these processes help improve patient clinical outcomes (and help physicians treat patients more efficiently), as well as enable cost reduction without compromising the quality of care.

The information that an analyst may want to gather to gain knowledge about current technological advancements and their effect on the healthcare industry may include, but is not limited to:

(1) Updates related to the *Health Information Technology for Economic and Clinical Health (HITECH) Act*;
(2) Developments in Information Systems and Technology as it relates to the healthcare industry, including but not limited to, diagnostic and therapeutic technology, and management information technology;
(3) Costs of implementing various systems; and,
(4) The type of technology prevalent in the area of expertise of the subject interest.

The various sources of information that may contain this data include, but is not limited to:

(1) Office of the Health Information Technology, US Department of Health & Human Services;[5]
(2) Healthcare Information and Management Systems Society;[6]
(3) FutureScan: Healthcare trends and implications; an annual publication, published by the Society for Healthcare Strategy and Market Development of the American Hospital Association and the American College of Healthcare Executives, highlights key trends affecting U.S. healthcare organizations;[7] and,
(4) MedTech, which is an association of over 100 pharmaceutical, biotechnology and medical technology companies, their suppliers and service providers, and research universities, that facilitates learning, collaboration, and a sharing of knowledge.[8]

The above information presents some of the data sources by which an analyst may gather information regarding the healthcare technological environment and the laws and regulations governing it, to facilitate the analyst's assumptions and calculations necessary to develop an opinion as to the *Fair Market Value* of the subject interest.

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As noted above, *specific research* is typically collected from the subject interest being appraised, and the appropriate contact designated by the client, e.g., *chief information officer* (CIO), *chief financial officer* (CFO); or legal counsel, when pertinent. As the requested documents and information are gathered, an engagement-specific database may be useful to appropriately account for the data in a manner that adequately *identifies*, *classifies*, and *stores* it, so that it may be timely and efficiently *retrieved* for use (ICSR).

The data requested of, and obtained from the subject interest may include, but is not limited to:

(1) Information on management information systems, including all software for accounting, coding, billing, reporting, patient records, etc., with the name of the manufacturer, product, modules, options, etc., as well as the version, release, and update numbers;
(2) A detailed inventory of owned and leased medical equipment and office equipment;
(3) The cost to build existing equipment or systems;
(4) A list existing medical technology used by the subject interest; and,
(5) Capital budgets or forecasted statements prepared by the subject interest, listing the allocated capital expenditure for technological advancements.

As this research is client and project specific, the documents and the information required may change, depending on the facts and circumstances surrounding the engagement.

The healthcare industry has experienced paradigm shifts over the past several years due to the growth in the number of healthcare technology companies, led by the 2007 public listing of Athenahealth, a medical software company whose shares jumped by 97% on the first day after the *initial public offering* (IPO).[9] Additionally, the healthcare industry is constantly changing with increased emphasis on advancements and utilization of new technologies. For instance, the revenue stream of an enterprise may be dependent upon a specific technology, new sources of competition may arise from the development of new and improved technologies that render the old methods obsolete. For example, the introduction of Nexium, "*The Purple Pill*," which revolutionized the treatment of bleeding ulcer patients, significantly reduced both the need for surgery and the length of hospital stays,[10] thereby diminishing patient demand for surgical services from gastroenterologists and permanently affected the *cottage industry* of ambulatory surgery centers that had flourished prior to the introduction of Nexium. In performing the requisite due diligence for a healthcare enterprise, an analyst should undertake research to identify any potential future advancement that may disrupt (or enhance) the revenue-generating capabilities of a subject enterprise.

The emerging technology in the clinical treatment of patients will also shape the *reimbursement environment* that *rewards providers* based on *quality* over *quantity*.[11] For example, the growing importance of the *value-based reimbursement* may bring about an integrated *management information technology* system that includes data input by the patient, provider, and payor.[12]

Owing to the increase in medical technology companies, as well as technological changes and regulations introduced by the *2010 Patient Protection and Affordable Care Act* (ACA), healthcare transactions are increasing in both size and complexity, resulting in emboldened efforts at regulatory review, requiring that the analyst seek and obtain robust general and specific research data and information in conducting a complete and thorough due diligence process (that will withstand scrutiny) related to the subject property interest being appraised, whether an *enterprise*, *asset*, or *service*.

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1 For more information, see the first installment of this six part series: "The Due Diligence Imperative – For the Valuation of Healthcare Enterprises, Assets, and Services" Health Capital Consultants, Vol. 10, Issue 9, September 2017, https://www.healthcapital.com/hcc/newsletter/09_17/PDF/DILIGENCE.pdf (Accessed 10/26/17).
2 *Ibid*.
3 "Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services" By Robert James Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, Volume 1, Hoboken, NJ: John Wiley & Sons, Inc., 2014, p. 2.
4 *Ibid*, p. 531.
5 "Health Information Technology" HHS, https://www.hhs.gov/hipaa/for-professionals/special-topics/HITECH-act-enforcement-interim-final-rule/index.html (Accessed 11/28/17).
6 "HiMSS" Healthcare Information and Management Systems Society, http://www.himss.org/ (Accessed 1/4/18).
7 "FutureScan, Healthcare Trends and Implications, 2017-2022" Health Administration Press, Society for Healthcare Strategy and Market Development of the American Hospital Association and American College of Healthcare Executives, 2017.
8 "About - MedTech" MedTech, https://www.medtech.org/about/ (Accessed 1/4/18).
9 "Athena IPO soars 97%" Lynn Cowan, The Wall Street Journal, September 21, 2007, https://www.wsj.com/articles/SB119033555918634637 (Accessed 1/4/18).
10 Cimasi, MHA, ASA, FRICS, MCBA, AVA, CM&AA, 2014, p. 496, 499.
11 *Ibid*, p. 627.
12 *Ibid*.

(Continued on next page)

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Todd A. Zigrang, MBA, MHA, ASA, FACHE, is the President of **HEALTH CAPITAL CONSULTANTS** (HCC), where he focuses on the areas of valuation and financial analysis for hospitals, physician practices, and other healthcare enterprises. Mr. Zigrang has over 20 years of experience providing valuation, financial, transaction and strategic advisory services nationwide in over 1,000 transactions and joint ventures. Mr. Zigrang is also considered an expert in the field of healthcare compensation for physicians, executives and other professionals.

Mr. Zigrang is the co-author of "*The Adviser's Guide to Healthcare – 2nd Edition*" [2015 – AICPA], numerous chapters in legal treatises and anthologies, and peer-reviewed and industry articles such as: *The Accountant's Business Manual* (AICPA); *Valuing Professional Practices and Licenses* (Aspen Publishers); *Valuation Strategies; Business Appraisal Practice*; and, *NACVA QuickRead*. In addition to his contributions as an author, Mr. Zigrang has served as faculty before professional and trade associations such as the American Society of Appraisers (ASA); American Health Lawyers Associate (AHLA); the American Bar Association (ABA); the National Association of Certified Valuators and Analysts (NACVA); Physician Hospitals of America (PHA); the Institute of Business Appraisers (IBA); the Healthcare Financial Management Association (HFMA); and, the CPA Leadership Institute.

Mr. Zigrang holds a Master of Science in Health Administration (MHA) and a Master of Business Administration (MBA) from the University of Missouri at Columbia. He is a Fellow of the American College of Healthcare Executives (FACHE) and holds the Accredited Senior Appraiser (ASA) designation from the American Society of Appraisers, where he has served as President of the St. Louis Chapter, and is current Chair of the ASA Healthcare Special Interest Group (HSIG).

John R. Chwarzinski, MSF, MAE, is Senior Vice President of **HEALTH CAPITAL CONSULTANTS** (HCC). Mr. Chwarzinski's areas of expertise include advanced statistical analysis, econometric modeling, as well as, economic and financial analysis. Mr. Chwarzinski is the co-author of peer-reviewed and industry articles published in *Business Valuation Review* and *NACVA QuickRead*, and he has spoken before the Virginia Medical Group Management Association (VMGMA) and the Midwest Accountable Care Organization Expo. Mr. Chwarzinski holds a Master's Degree in Economics from the University of Missouri – St. Louis, as well as, a Master's Degree in Finance from the John M. Olin School of Business at Washington University in St. Louis. He is a member of the St. Louis Chapter of the American Society of Appraisers, as well as a candidate for the Accredited Senior Appraiser designation from the American Society of Appraisers.

Jessica L. Bailey-Wheaton, Esq., is Vice President and General Counsel of **HEALTH CAPITAL CONSULTANTS** (HCC), where she conducts project management and consulting services related to the impact of both federal and state regulations on healthcare exempt organization transactions and provides research services necessary to support certified opinions of value related to the Fair Market Value and Commercial Reasonableness of transactions related to healthcare enterprises, assets, and services. Ms. Bailey-Wheaton is a member of the Missouri and Illinois Bars and holds a J.D., with a concentration in Health Law, from Saint Louis University School of Law, where she served as Fall Managing Editor for the *Journal of Health Law & Policy*.

Daniel J. Chen, MSF, is a Senior Financial Analyst at **HEALTH CAPITAL CONSULTANTS** (HCC), where he develops fair market value and commercial reasonableness opinions related to healthcare enterprises, assets, and services. In addition, Mr. Chen prepares, reviews and analyzes forecasted and pro forma financial statements to determine the most probable future net economic benefit related to healthcare enterprises, assets, and services, and applies utilization demand and reimbursement trends to project professional medical revenue streams, as well as ancillary services and technical component (ASTC) revenue streams. Mr. Chen has a Master of Science in Finance from Washington University St. Louis.