# GAAMA Appendices, References, and CV…



## Appendix A: Glossary

**"AIDA"** is an acronym for customer evolution through the stages of awareness, interest, decision, and action.

**Asset stripping:** selling of corporate assets at a large discount with prices negotiated at less-than-arm's-length to provide personal gain for management.

**B$^3$** symbolizes the core components of a deal as brains, bucks and been-there. It is a more-complete and lower-cost alternative to traditional financial consulting.

**Bought vs. sold distinction**

The table below distinguishes between goods and services that are “bought in reverse markets" and that are “sold in target markets." A reverse market is where the customer initiates a transaction with a vendor. Goods and services that are "bought" in reverse markets are self-selected by consumers. They are complete with respect to both product information and market infrastructure. Goods and services that are "sold" in target markets are regarded as “works in progress.” They require firm sponsorship in order for transactions to be completed. Intermediaries compensate for a lack of product information and/or market infrastructure deficiencies until goods and services develop and can be integrated into society at large in reverse markets.

| Firm Products | Product Components | Consumer Components | Market Process |
|---|---|---|---|
| Buying | Need fulfillment | Awareness | Order-taking |
| Explaining | Distribution channels | Interest | Demonstrating |
| Promoting | Advertisement | Decision | Brokering |
| Selling | Strategic elements | Action | Creating |

**“Clooshka”** is the Ukrainian word for hockey stick. Investment analysts look for stock charts that look like hockey sticks to illustrate models of success.

**Complexity** theory deals with processes where a large number of seemingly independent elements act coherently.

**Fractals** are self-similar parts that are related to the entire entity as leaves on trees.

**Firms** are economic units that transform inputs into outputs for use by other economic agents. Firms evolve through distinct phases of customer and valuation development.

**GAAMA** is an acronym for:
- **G**lobal: widespread;
- **A**synchronous: not timely information;
- **A**symmetrical: unequal access to information;
- **M**arket: real goods and services / financial system; and
- **A**ctivity: researching, pricing, manufacturing, transacting, clearing, and settling.

By way of background, the GAAMA model was first introduced at the 1997 PFTS Securities Conference in Kiev, Ukraine. It was developed in response to excessive transaction costs that ultimately would have constricted the development of the Ukrainian Capital Market. Seeking guidance in the field of transaction cost economics, I corresponded with Dr. Ronald Coase Ph.D.

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November 14 1997

Stephen A. Boyko
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Dear Mr Boyko

Thank you for sending me your paper. I don't have time to study your paper in detail but it clearly deals in a sensible way with important questions. I thought you would find interesting my Nobel Prize lecture and perhaps even useful to you in your thinking and am therefore enclosing it with this letter.

All good wishes

Yours sincerely

Ronald Coase

P.S Best wishes for your work in Ukraine

**Governance** structures organize the economic activity between and among markets, firms, government agencies, and industrial policy enterprises.

**"IDAC"** or Issuer Disclosure and Analytic Center, is a regional collaborative commerce platform that provides liquidity for portfolio investors. IDAC establishes an informational and professional services co-operative network for capital markets in the Eastern European Region. IDAC increases market efficiency and transparency for issuers and market participants to enable them to be integrated more readily into a global capital market

**"IDAN"** or International Dealer Access Network, is a regional collaborative commerce platform that provides materiality for venture investors. IDAN is a financial advisory and funding service that facilitates economic development by serving as a global incubator for the establishment of strategic alliances.

**Infomediation** is the process by which manufacturers educate consumers as to the product qualities and transactional processes. John Hagel coined the concept of an "infomediary" in his book "Net Worth".

**Intermediation** is the process by which third-party agents educate consumers as to the product qualities and transactional processes.

**Markets** are coordinated pricing systems that allocate voluntary exchanges between consumers, workers, and owners of production (Adam Smith's invisible hand). Efficient economies are a function of planning, transacting, infomediating, and regulating. Markets are either normative (equilibrium and near-equilibrium) or GAAMA (far-from-equilibrium).

**Networks** are e-commerce hubs. One-way, B2C, networks called "Sarnoff Networks" after the inventor of TV broadcasting deal directly with buyers to create benefits for sellers. B2B e-commerce hubs tend to be two-way networks that are called "Metcalfe Networks" after Metcalfe's Law of switched networks. They mediate between buyers and sellers to create benefits for both buyers and sellers. Consequently, the value created by B2C hubs tends to increase linearly with the number of buyers, while the value created by B2B eHubs increases as the square of the number of participants.

**Paradox of the Economy** illustrates the policy maker's dilemma to be open and closed at the same time. Economies have to be open to new innovations while remaining focused on their comparative advantage in the marketplace. Economies must accommodate market transparency with firm trade secrets. This requires a reflexive exchange of commercial activity among the four governance structures.

**Reflexive** refers to George Soros' description of the dynamic tension in market activity as evidenced by the actions, perceptions, and beliefs of market participants.

**Reverse market**: is where the customer initiates a transaction with a vendor. Goods and services that are "bought" or self-selected by consumers in reverse markets are complete with respect to both product information and market infrastructure.

**Rules** for the capital market are defined as "the retrospective codification of best-practices for operational efficiency".

1. Rules codify best-practice
   - Rules respond to securities activity
   - Codification represents an "ivory-snow" consensus (99.44% agreement)
2. Rules enable technology to "disintermediate" the non-value added factors of the transaction. The table below illustrates how the US capital market used technological innovations to increase societal participation and capitalization while lowering transaction cost (SIA Factbook, 2000).

| Category | 1974 | 1999 | % Change |
|---|---|---|---|
| Percent of societal participation | 18% | 74% | +311 % |
| Commission: 300 shares at $35 | $350 | $30 | -91 % |
| NYSE listings | 1,935 issues | 3,025 issues | +156 % |
| NYSE market capitalization | $4.4 billion | $12.3 trillion | +2,795 % |
| NYSE average daily volume | 12 million shares | 700 million shares | +5,733 % |
| Mutual funds | 305 funds | 6,778 funds | +2,122 % |
| Mutual fund capitalization | $56 billion | $4,490 billion | +7,917 % |

3. Rules are proscriptive limitations that provide a "net benefit" to society.

- Balance sheet criteria measures wealth as increases in capital stock value.
- Income statement criteria measures job creation as increases in real GDP.

4. Rules are proportionate with the current level of commercial activity conducted in the securities market.
5. Rules are defined in terms of gravitas and granularity.
   - Gravitas: SEC Rule 15c3-1 require a securities firm to cease doing business if it is not in compliance
   - Granularity: SEC Rule 15c3-1 defines the "haircut" or percentage deduction to be applied to each category of assets in the computation of net capital.

**"Securitized colonization"** occurs when a lack of competition among investor categories create monopolistic pricing opportunities for foreign direct investors. FDIs have a "make" or "buy" decision. They purchase foreign enterprises in order to outsource high-touch, stagnant services to subsidize the production of their value-added elements.

**Societal trend** characteristics are:
1. Self-evident for the duration of the trend's cycle;
2. Of a significant period of time (six to ten years);
3. Material in scale, scope, and span;
4. Homogeneous in nature;
5. Greater than one per cent of GDP with a growth rate more than five times the GDP growth rate;
6. Consistent with public policy (supported by governmental regulation, subsidies, and tax incentives); and,
7. A reflexive process that is a continuous function during the trend's cycle.

**Standards** are prospective industry norms or aspirations. Standards are defined in terms of "mass" indicating the number of people effected by the command and "materiality" indicating the relative importance of the command. The FLITE Market Model is the paradigm for capital market standards. If capital markets are to contribute to the "culture of confident expectations" that enhances economic development, they must be:
- **F**air
- **L**iquid
- **I**ntegrated
- **T**ransparent

- **E**fficient

~~Fairness~~ of a market refers to whether all participants are treated equally and reasonably to ensure that investors, issuers, and broker/dealers are able to conduct their market activities in accordance with high standards of commercial honor, and just and equitable principles of trade. Market rules provide for the equitable allocation of fees among all participants. Fair markets are characterized by:

1. Non-discrimination: the consummation of the transaction depends on the terms of the trade rather than the characteristics of the trader.
2. Equitable treatment
   - Anti-fraud provisions to prevent manipulative practices
   - Order processing to prevent "bucketing"
   - Suitability of recommendations and frequency of activity "churning".
3. Transaction prices reasonably related to market prices to limit excessive transactional costs, which create structural market inefficiencies.
   - Undue compensation where brokers are rewarded for assuming both broker (order-processing) and dealer (inventory and adverse information) risks.
   - Unrelated-compensation where broker remuneration is in the form of a commission (competitive reward) rather than a fixed per trade rate.

~~Market liquidity~~ presumes sufficient buyers and sellers are available to purchase and sell securities at prices that are reasonably related to quoted prices Liquidity is a function of time and volatility. It is typically defined by four characteristics:

1. Depth: sufficient market orders available at prices above and below the current equilibrium price to absorb large orders without material price changes;
2. Breadth: sufficient intermediaries ready to execute the transaction at their quoted price;
3. Volatility: systematic risk to price over time; and,
4. Resiliency: the market quickly attracts new orders after price changes.

~~Integration~~ with the world financial community to enable capital to flow unencumbered pursuant to the International Organization of Securities Commissions' recommendations. International portfolio investors require that the post-trade infrastructure provide a dependable process for settlement of securities trades and safekeeping of securities and monies. Perhaps the most important factor in determining whether international investors have confidence in a market is their trust in the basic elements of market infrastructure. These investors will not consider investing unless they are sure that market infrastructure is sound, transparent, fair, and operates according to clear rules. Profitability matters little unless investors are certain that their ownership is recorded properly and their ability to sell shares easily when desired is unencumbered.

~~Market "transparency"~~ refers to dissemination of information about prices, volumes, and trades in securities. Transparency ensures that full disclosure of all material financial information is readily available to investors, issuers, and broker-dealers.

~~Efficiency~~ is a function of the time, effort, and cost required to change ownership.

- Time is measured from order entry to order execution, to order processing, and to transaction clearance and settlement.
- Effort to consummate a transaction is a function of the number of financial intermediaries with whom the principals to the transaction must deal.
- Cost is related to the broker's reservation spread, which covers the marginal cost of carrying out the next transaction. It consists of order-processing and inventory expenses. The investor's cost is a function of the broker's cost plus the commission plus the bid-ask spread. The issuer's cost is its cost of capital as determined by dividend yield minus the growth rate of market appreciation.

**Target market** is where an intermediary initiates a transaction with a customer. Goods and services that are "sold" in target markets are regarded as "works in progress". They require firm sponsorship in order for transactions to be completed.

**Transfer pricing:** selling of corporate production at a large discount with prices negotiated at less-than-arm's-length to provide personal gain for management.

**Valuation** model for the life cycle of emerging-growth companies (EGCs).

~~Introductory stage~~**:** market demand valuation related to the economic benefit that is being provided and the percent of future market share that is anticipated to be captured. The stock price is a function of hopes, dreams, and PhDs. Speculative investments trade in bands of:

1. Less than three dollars
2. Three to five dollar range
3. Margin qualification break-out

~~Development stage:~~ price-to-sales ("PSR") ratio

1. When to recognize sales
   - Point of sale (adjustments)
   - Percent of completion (contract)
   - Delivery of product or service
   - Receipt of cash (installments)
2. Recognition of billings, bookings, and backlog
3. Normative range is 75 to 125 percent of sales.
4. Prime stage for initial public offering ("IPO")

Until EGC reaches a sales run-rate of $50 million it should favor capital adequacy over dilution. *Only the unsuccessful remain undiluted.* Investment Bankers' IPO target a three-year time horizon with a minimum of sales run-rate of $25 million. They tend to price IPOS less than 75 percent PSR.

~~Growth stage:~~ cash flow is the prime determinant of EGC survival. Normative cash flow multiples are:

1. 4.0x cash flow in a bearish market
2. 5.5x cash flow in a normal market
3. 7.0x cash flow in a bullish market

Until an EGC reaches maturity, its existence is dependent upon selling its product/service and selling its corporate stock.. EGCs reach maturity by achieving and maintaining a positive cash flow. Less CEO emphasis is placed on selling stock. Greater CEO emphasis is placed on managing business. Definitions of cash flow are:

1. Operating cash flow: earnings before taxes plus noncash charges;
2. Cash flow: net income plus noncash charges; and
3. "Free" or "excess" cash flow: cash flow less contractual commitments and capital budgeting items

~~Prime stage~~: is a multiple of earnings per share

1. P/E multiple variables: Greater sales, Larger margins, Fewer shares outstanding, and Lower taxes
2. P/E multiple range
   - Bearish is less than 12x P/E
   - Normal is 12x-to-18x P/E
   - Bullish is greater than 18x P/E
   - Hockey-stick model defines outlier condition

~~Maturity stage~~: is a function of yield basis, book value, or break-up value

## Appendix B: GAAMA Correspondence

GMT

**Global Market Thoughtware, Inc.**
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August 30, 2002

The Honorable Cliff Stearns
United States House of Representatives
2227 Rayburn Building
Washington, DC 20515

Dear Congressman Stearns:

In doing research for an upcoming capital market consulting assignment, I had occasion to read your October 4, 2001 letter to Mr. Edmund L. Jenkins, Chairman, Financial Accounting Standards Board wherein you raised two concerns that:

> " press release earnings announcements follow no standards that can be applied for comparison or analysis; and the more favorable pro forma earnings are replacing actual earnings in widely disseminated valuations. The resulting information that is increasingly becoming the baseline is more confusing than helpful and will ultimately

> harm investors, especially individual investors, and the markets."

I believe your concerns to be valid as evidenced by the Enron bankruptcy. However, recent legislation that addresses financial operational problems tends to conflate rules with the standards of transparency and independence. Whenever different elements are grouped together and treated similarly, confusion is certain and error is likely. Furthermore asymmetrical incentives that favor analyst "buy" recommendations over "sell," "sell short," and/or "put option" recommendations engender a practitioner bias in favor of a one-way, upside market that periodically creates far-from-equilibrium conditions resulting in boom-bust scenarios.

Capital market activity can be divided into normative and non-normative categories. Normative capital market activity is a near-equilibrium condition that is driven by incentives and commands. Incentives are motivationally related rewards attendant to profit objectives. Commands are a composite of rules and standards. The Danish philosopher, Soren Kierkegaard, stated that life is lived by looking forward, but learned by looking backwards—similarly with the command components of standards and rules. Standards are prospective societal policies. They are systemic prescriptions that enable the realization of industry norms relative to cultural values. Rules, on the other hand, are the retrospective codification of best-practice procedures that proscribe operational limitations. Rules are societal tests that validate a standard's end-condition.

If capital markets are to contribute to the "culture of confident expectations" that creates wealth, they must adhere to the "FLITE" standards of: Fairness, Liquidity, Independence, Transparency, and Efficiency. The standard of transparency ensures that full disclosure of all material information is readily available to capital market participants, while the standard of independence ensures a lack of bias. Standards are defined in terms of "mass" indicating the number of people effected by the command and "materiality" indicating the relative importance of the command. The table below demonstrates capital market growth for a 25-year period that meets the preconditions of mass and materiality (Securities Industry Association Factbook, 2000).

| Category | 1974 | 1999 | % Change |
|---|---|---|---|
| Percent of participation | 18% | 74% | +311 % |
| NYSE listings | 1,935 issues | 3,025 issues | +156 % |
| NYSE market capitalization | $4.4 billion | $12.3 trillion | +2,795 % |
| NYSE average daily volume | 12 million shares | 700 million shares | +5,733 % |
| Mutual funds | 305 funds | 6,778 funds | +2,122 % |
| Mutual fund capitalization | $56 billion | $4,490 billion | +7,917 % |

Rules are systemic proscriptions that explicitly delineate organizational limits in terms of granularity (the degree of precision required to ensure compliance) and gravitas (the seriousness of a violation as measured in terms of the amount of a fine and/or duration of a sentence). The Sarbanes-Oxley Act of 2002 increased capital market commands by establishing the Public Company Accounting Oversight Board. The Board will, among other things, promote standard of independence by establishing rules to separate audit and consulting functions, prohibit insider trades during black-out periods, require CEO and CFO certification, and provide whistle-blower protection. Rule granularity and gravitas were increased for specific violations (i.e. wire fraud) by equating penalties with those contained in the Securities Exchange Act.

Enron built complex franchises in several business units in very large markets. But for all the attention that was lavished on Enron, the company remained largely impenetrable to outsiders. An early and prescient questioner was Fortune Magazine’s Bethany McLean (Fortune, March 5, 2001) who started with a pretty straightforward question: How exactly does Enron make its money? McLean soon experienced many of the same disclosure concerns that you did and realized that details were hard to decipher because the numbers that Enron presented were extremely complicated to analyze. Even quantitatively minded “Wall Streeters” who scrutinized the company for a living would confide that "If you figure it out, let me know," or “If you have a year” as a preface to their Enron earnings forecasts.

To skeptics like McLean, the lack of clarity raised a red flag about Enron's pricey stock valuation. But lacking incentive for short-sale recommendations, most analysts simply validated the company’s lofty valuation. At a late-January 2001 meeting with analysts in Houston, Enron declared that it should be valued at $126 a share. This was more than 50 percent premium to the then current level. As of March 2001, First Call's analyst survey had thirteen of its eighteen analysts rate Enron as a buy (Fortune, March 5 2001).

What Enron had learned was that it could create its own reality through confusion by using accounting rules in support of the accounting standard of financial transparency. It realized that excessive granularity produced information overload for investment analysts. Investment analysts format issuer data to provide information. They then test the information given various economic assumptions to obtain knowledge that results in predictive capability as to price valuations. Enron recognized that if it filed the financial equivalent of the "Rubric's Cube," it caused analysts to substitute expertise (technical data) for experience (relevant judgment). Analysts worked the numbers without understanding the numbers. Asynchronous time pressures (de jure compliant, de facto noncompliant) coupled with asymmetrical incentives lead to an analytical group-think resulting in capital cronyism.

In essence, Enron created GAAMA. GAAMA is an acronym for: **G**lobal (widespread in terms of mass and materiality); **A**synchronous (not timely information); **A**symmetrical (unequal access to or incorrect information); and **M**arket **A**ctivity (researching, pricing, transacting, clearing and settling, and inventorying). It is a governance structure for non-normative economic activity evidencing far-from-equilibrium conditions caused by standards that are either too high or too low, interacting with too many or too few rules for a given level of commercial activity. It is a knowledge transfer system that integrates commands with incentives.

The GAAMA Model (see attached) is a three-dimensional, non-linear paradigm. The x-axis depicts the volume function. It delineates commercial activity resulting from too many rules that cause confusion (i.e. related inter-company accounts and loan guarantees) and/or too few rules or best practices that cause uncertainty (i.e. separation of consulting and audit functions). The x-axis resolves bad trade practices. The y-axis displays the pricing function. Standards that are too high are exclusionary operational supports that direct order flow, while standards that are too low are indiscriminate price controls that act as a disincentive to commercial activity. The z-axis represents a ratio of commands-to-incentives for a given level of commerce. The z-axis posits that the smaller the ratio of commands-to-incentives, the larger the area of normative economic activity to provide a societal net benefit.

GAAMA markets are created when commands are disproportionate to incentives for a given level of commercial activity. This raises the cost of doing business in the normative economy and is an incentive to direct the order flow to controlled, offshore, balkanized, or underground GAAMA markets. Attempts to control an economy by legislating more rules with inappropriate standards result in reduced resiliency and increased risk of systemic failure. Enron produced suspect financial statements with the aid from too many rules that produced confusion among analysts combined with too low a standard for accounting independence This resulted in an underground market that enabled Enron to manipulate the price of its stock.

The Sarbanes-Oxley Act of 2002 provides needed command reform. Care is required since excessive commands relative to incentives encourages corruption and incentives lacking cultural relevancy limit practitioner buy-in that results in indifference. To ensure systemic proportionality, incentives are required to address overvaluations. Otherwise future legislation will be needed to address the problems of the next market boom.

Subsequent to your review, I would welcome the opportunity to discuss these concepts with you. I may be reached at 301-215-6441.

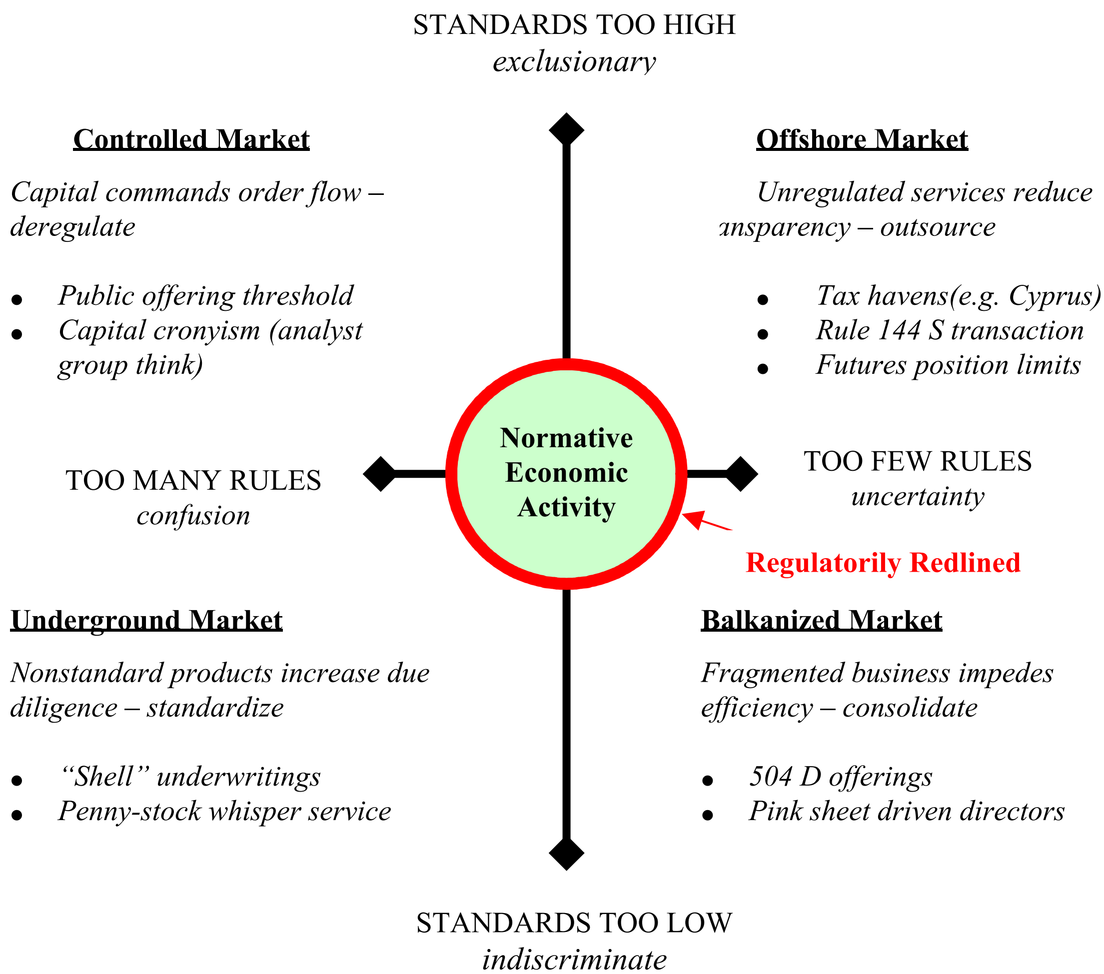
Sincerely,

Stephen A. Boyko, President
Global Market Thoughtware, Inc.

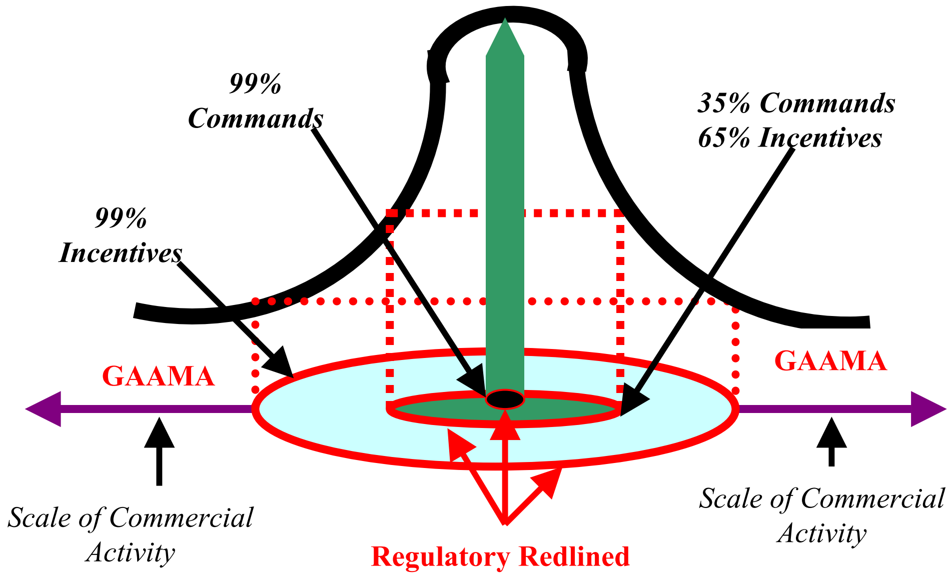
Attachments

## GAAMA Model

**~~Vertical view depicting x-axis and y-axis~~**



**Horizontal view depicting the z-axis**



# Appendix C: Business Development Company (BDC)

## Section 53 of the 1940 Investment Companies Act: Election to Be Regulated as Business Development Company

a. Any company defined in section 2(a)(48)~~(A)~~ and ~~(B)~~ of this title may elect to be subject to the provisions of sections ~~Section 55~~ through ~~Section 65~~ of this title by filing with the Commission a notification of election, if such company -

   1. has a class of its equity securities registered under ~~section 12~~ of this title; or

   2. has filed a registration statement pursuant to ~~section 12~~ of this title for a class of its equity securities.

b. The Commission may, by rule, prescribe the form and manner in which notification of election under this section shall be given. A business development company shall be deemed to be subject to sections ~~Section 55~~ through ~~Section 65~~ of this title upon receipt by the Commission of such notification of election.

c. Whenever the Commission finds, on its own motion or upon application, that a business development company which has filed a notification of election pursuant to ~~subsection (a)~~ of this section has ceased to engage in business, the Commission shall so declare by order revoking such company's election. Any business development company may voluntarily withdraw its election under ~~subsection (a)~~ of this section by filing a notice of withdrawal of election with the Commission, in a form and manner which the Commission may, by rule, prescribe. Such withdrawal shall be effective immediately upon receipt by the Commission.

## Section 59 – Functions and Activities of Business Development Companies

Notwithstanding the exemption set forth in ~~section 6(f)~~ of this title, ~~section 12~~ of this title shall apply to a business development company to the same extent as if it were a registered closed-end investment company, except that the Commission shall not prescribe any rule, regulation, or order pursuant to ~~section 12(a)(1)~~ of this title governing the circumstances in which a business development company may borrow from a bank in order to purchase any security.

**Illustration**

**Harris & Harris Group, Inc.**

Harris & Harris Group, Inc. (the "Registrant" or "Company") is a publicly traded venture capital investment company (symbol, **HHGP**), operating as a Business Development Company ("BDC") under the Investment Company Act of 1940 (the "1940 Act").

The Company's objective is to achieve long-term capital appreciation, rather than current income, from its investments. The Company has invested a substantial portion of its assets in private development stage or startup companies and in the development of new technologies in a broad range of industry segments.

As a venture capital company, the Company invests in and provides managerial assistance to its private investee companies which, in its opinion, have significant potential for growth. There is no assurance that the Company's investment objective will be achieved. The Company's investments are high risk in nature, and therefore Harris & Harris Group's stock is not suitable for investors unless they are able to evaluate and bear such risk.

**For more information, please contact:**

Harris & Harris Group, Inc.
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**Stephen A. Boyko**

Mr. Boyko is President of Global Market Thoughtware, an international consulting company. He has over twenty-five years of business and financial experience in a broad range of industries. His experience includes brokerage operations, financial management, consulting, investment banking, international consulting, regulatory and management audits, industry seminars, teaching managerial finance at the graduate level, and formulating securities regulatory policy for the National Association of Securities Dealers, Inc. ("NASD").

As an international consultant, he provided a practitioner's perspective in the areas of corporate governance and development of the Ukrainian Capital Market's infrastructure, broker-dealer network, corporate securities, and self-regulatory organization (SRO). He wrote a strategic "white paper" for the development of the Ukrainian Capital Market. He has advised the Ukrainian Securities Commission, market professionals, issuers, and SROs on development of a private sector market information and disclosure system, and a capital formation platform.

Mr. Boyko is a registered managing principal (Series 24) and a financial and operational principal (Series 27). He has established procedures for brokerage operations and implemented marketing programs for retail, institutional, and corporate clients. To this purpose he wrote the $B^3$ *Prescription* to ensure that corporate clients achieve their full valuation.

During his tenure with the National Association of Securities Dealers, Inc. he audited member firms in Maryland, Virginia, North Carolina, and the District of Columbia, for compliance with securities laws. He formulated national policy for securities laws, examination procedures, and internal auditing programs. As the Director of Money Management in the NASD's Treasurer's Office, he supervised a staff of seven individuals to maximize investment of the NASD's working capital and pension plans.

Mr. Boyko has taught Managerial Finance and Entrepreneurship at American University's Kogod School of Business MBA program. He has also lectured extensively on the subjects of economic and capital market development. Mr. Boyko married Mardena K. Ehret on May 25,1974. He holds a BA in history and MBA in finance. He is conversant in French, Russian, and Ukrainian.

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