Quick Reference Card (QRC)

Identify and Monitor a Stock's Critical Factors (Summary)

Seek Factors that Meet All Four Criteria Below:

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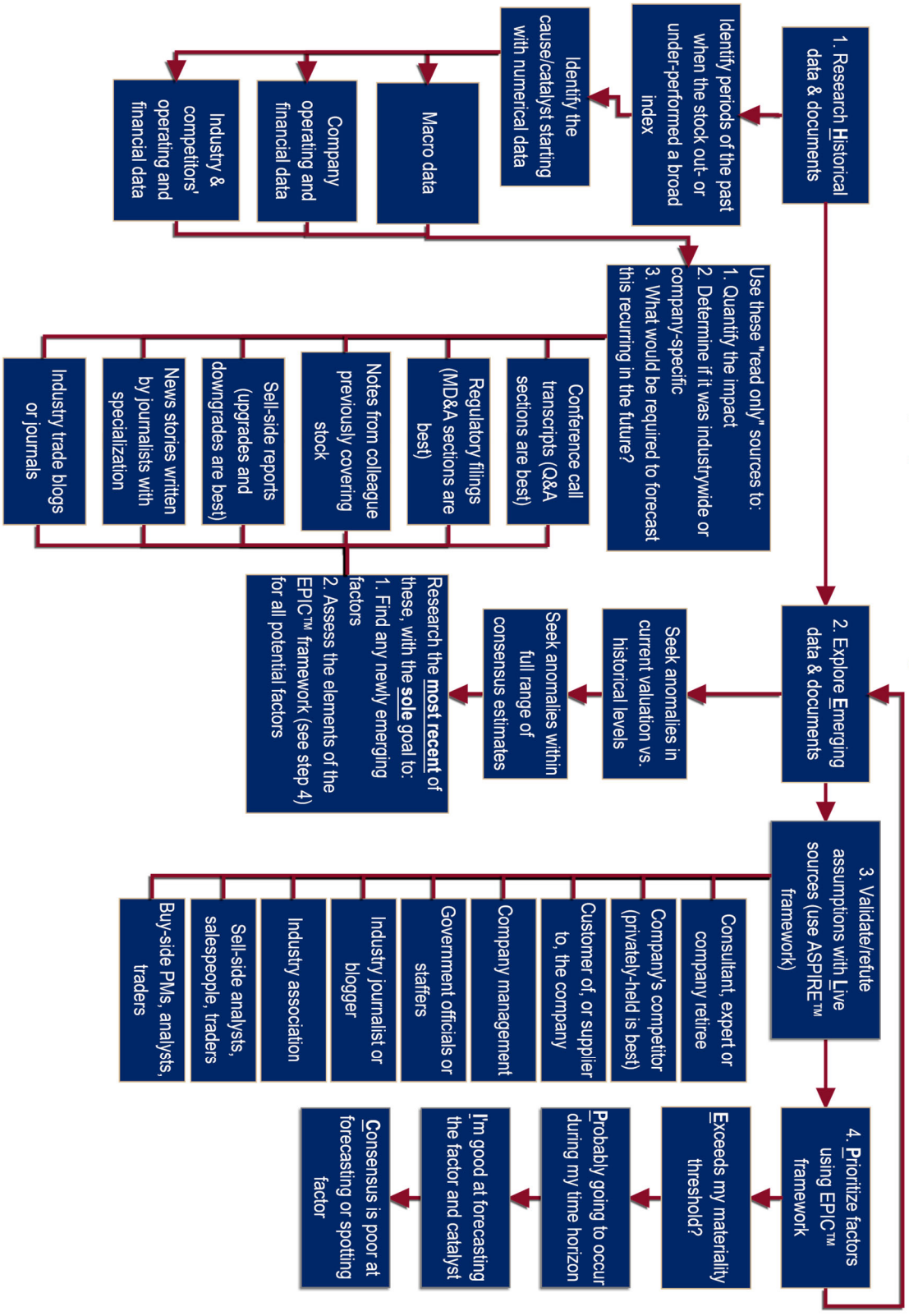
Quick Reference Card (QRC)

Identify and Monitor a Stock's Critical Factors (Summary)

HELP™ Framework for Identifying Critical Factors



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Quick Reference Card (QRC)

Information Sources Pros and Cons

Individual Conversation

Source for Information	Pros	Cons	Confirm or Refute Historical Factors*	Assess New or Emerging Critical Factors	Assess Market Psych.
Buy-side analyst or portfolio manager (as source for buy-side or sell-side)	Best place to gauge investor expectations	May not be representative of the larger investor base	□		■
Company's competitor (publicly-traded or privately-held)	Knows the sector and the competitive dynamics	May not be familiar enough with other company's factors to speak with authority. May try to bash the competition	■	■	
Company's executives (including investor relations)	Usually forthcoming about opportunistic factors	Usually downplay or ignore potentially negative factors	□	□	□
Conference speaker or author of book/academic paper	Usually willing to speak with others	May not fully understand implications for company or stock	■	■	
Consultant, expert, or company retiree	Very close to the issue	Can be difficult to find	■	■	
Customer of, or supplier to, the company (publicly-traded or privately-held)	First-hand knowledge of the company's value proposition	Contact may not be representative of the larger customer base	□	□	
Government officials or staffers	Often the closest to regulatory or legislative changes	Often won't speak on the topic. If so, may not provide accurate forecast	□	□	
Industry association or forecasting service representative	Understands complex industry issues	May be biased in the sector's favor and may not fully understand implications for company or stock	□	□	
Industry journalist/blogger	May understand complex issues and provide direction to other sources of information	May not fully understand implications for company or stock	■	■	
Sell-side analyst (for the buy-side) considered among top 3 in sector	May be the only place to gauge consensus thinking and to obtain proprietary research	Subjectivity or low-quality work can result in incorrect output	■	■	■
Sell-side salesperson (with deep knowledge of specific stock)	Close to many buy-side investors	Generalist salespeople may not have full understanding of any single stock	□		□
Trader of stock (with deep knowledge of specific stock)	Usually familiar with short-term psychology of stock	May not fully understand company or long-term issues	□		□

Legend: ■ = best first source, □ = good source

* Source must have been active with the stock/company at time of historical anomaly

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Quick Reference Card (QRC)

Information Sources Pros and Cons

Read Only

Source for Information	Pros	Cons
Company-released information	Free. May be only source for certain information	Tends to be biased positively
Data service	Often the best at providing granular product or sector data	Not always provided in a timely manner. Can be expensive. Not proprietary
Economic data	Often reliable and relatively objective	Not company-specific. Past trends don't forecast the future
Financial media	Low cost and somewhat objective	May not fully understand implications for company or stock
Forecasting service	Often the best at forecasting trends for the factor	Not always provided in a timely manner. Can be expensive. Not proprietary
Industry trade journal, website, or blog	Low cost. Somewhat objective. Understands complex issues	May be biased in the sector's favor. May not fully understand implications for company or stock
Proprietary survey	Output is proprietary	Expensive and can take a significant amount of time
Sell-side report (for buy-side analysts)	Easy to access and search (if client)	May be biased by analyst's rating
Third-party research firm	The study answers your specific questions and you own the data	Expensive and can take a significant amount of time

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Detailed Reference Card (DRC)

Identify a Stock's Critical Factors

Seek Factors That Meet All Four Criteria Below

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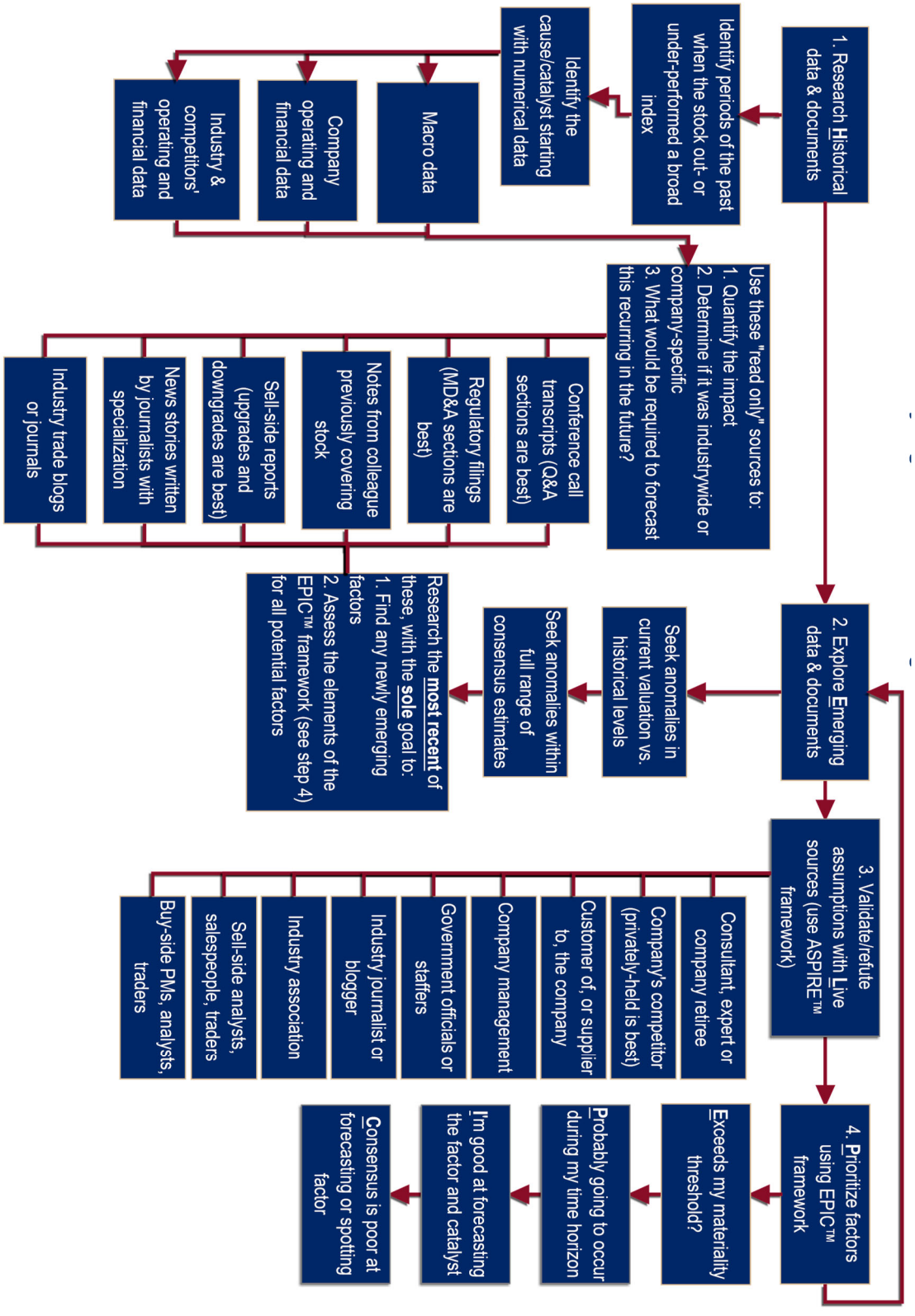
Detailed Reference Card (DRC)

Identify a Stock's Critical Factors

HELP™ Framework for Identifying Critical Factors



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Detailed Reference Card (DRC)

Identify a Stock's Critical Factors

Identifying a Stock's Critical Factors is Very Important but Not an Exact Science

Mastering the skill of identifying just the few critical factors most likely to move a stock will help you generate more informed insights, forecast with greater precision, make better stock calls, communicate your calls more powerfully, and (if you are a sell-side analyst) increase your client votes. The process described below includes identifying critical factors that have occurred in the past, possibly over one or more decades. However, to avoid getting sucked into a black hole of time, don't get too detailed in this analysis – remember you're looking for the factors that have caused the stock to significantly out- or under-perform its peers – not learn everything that has occurred during the company's entire history.

Step 1: Research Historical Data and Documents ("H" of HELP™ Framework)

The purpose of this step is to identify the periods in the past when a stock substantially out- or under-performed its peers and the sector out- or under-performed a broad index. This process is also extremely helpful in identifying a stock's optimal valuation multiple (discussed in a separate QRC and workshop).

A. Collect Data to Identify Periods When the Stock Out- or Under-performed a Broad Index

- Depending on your preference and the ease of using your market data service (e.g., Bloomberg, FactSet, Thomson One, etc.), determine if it's more efficient to work within a workbook that can be automatically updated or stay within the market data application. The goal will be to build this analysis so that it can be easily repeated often in the future for your existing stocks and new stocks added to your coverage.
- Obtain the data series below, going back as far as possible. (Most data collection services will not have forward consensus estimates prior to 1990.) In terms of time intervals (between the data points), requesting weekly data may result in too much information (especially if you can obtain data going back 25 years), while requesting only quarterly data may not capture important anomalies. You'll need to weigh these two issues to strike the right balance.
  - Company-level (if the stock hasn't traded for more than a year, you may want to do this step for 2 or 3 of its closest competitors)
    - Required:
      (1) Stock's closing price, adjusted for historical stock splits. Avoid using data where the service has adjusted the closing price to include reinvestment of dividends over time because most of the broader or sector indexes (which will be used in this analysis) do not do this (e.g., the S&P 500 is conventionally shown as a price return index which excludes appreciation from dividends). If the closing stock price from your provider includes reinvested dividends, this may reduce the ability to spot periods of significant out- and under-performance of the stock, which is the goal of this step.
      (2) Rolling next 12 months ("NTM"), also referred to as 12-month forward ("TMF"), consensus EPS, sales, or CFPS estimates (ensure the data is not "current" or "trailing" results). Some services will provide a rolling 12-month forward consensus estimate at any point in time, while others will provide only "current fiscal year" ("FY1") and "next

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fiscal year" ("FY2"), which will require an additional step to create a rolling 12-month average.

(3) The most important company-specific metrics that drive earnings or cash flows (e.g., quarterly sales, margins, volume, pricing, etc.)

- Sector-level
  - Sector stock index (such as consumer staples) closing price.
    (1) Some sectors have good representative indexes, such as the GIC's 24 industry groups, 68 industries, and 154 sub-industries.[1] Check to ensure the index has a good representative sample of companies. If it's limited to a small sample (only 2 or 3 companies) that doesn't represent your assigned universe of stocks, look for a broader index or build your own.
    (2) To build your own, obtain the market capitalization for the sector at each point in time by adding the market capitalization of all the companies in the universe. This is not an exact science, but it's the fastest way to identify the value the market places on the sector. This still requires adjustments to be made for company-initiated events that impact market cap but do reflect a change in value from the market's perspective (such as a large stock offering or when a company goes private or bankrupt).
    (3) It's also possible to use sector ETFs as a proxy, but they will not likely go back prior to 1998 when ETFs became more popular.
  - Broad stock index (such as S&P 500) closing price
  - Optional:
    (1) Sector demand: Sales/volume and average selling price (ASP) for the sector's major businesses lines that can be compared across companies in a sector (e.g., auto sales, mobile handset sales, airline revenue per seat, etc.), which are sometimes available through industry associations
    (2) Sector supply (capacity factors): Resource utilization rates or any data that measures the degree of sector supply (e.g., airline industry load factor, retail revenue per square foot or meter, etc.)
- Macro-level:
  - A macro factor can impact two sectors in opposing ways and potentially have no impact on a third sector. Complicating matters, a macro factor can have a positive correlation with a sector's stock performance during one business cycle and a reverse for the next. As such, before drawing a sweeping conclusion such as "high oil prices always drive this sector down," it's important to validate cyclical trends over a number of cycles and not just the most recent.
  - To identify if macro data is impacting a specific stock or sector, it's important to display the data in a manner that illustrates the rate of change rather than just a raw number. For

[1] http://en.wikipedia.org/wiki/GICS

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example, 10% unemployment is a disappointing number in isolation, but not if it is coming down from 12%. When possible, illustrate the data below in terms of how it is changing over time. Examples of macro factors that impact stocks include:

(1) Economic volumes such as industrial production (monthly), manufacturing, and service levels (reported monthly by the ISM in the U.S.)
(2) Unemployment (in the U.S., it can be the Employment Situation Report or Weekly Claims for Unemployment Insurance)
(3) Inflation (consumer and producer prices)
(4) Interest rates for longer-term borrowing (can include government or corporate bonds)
(5) Sector-specific macro factors such as global trade, oil prices, seasonal temperatures, currency exchange rates

B. Clean Up the Data

- Smooth artificial spikes caused by special events such as a spin-off or missing data
- Eliminate data for companies when earnings drop to near zero (the P/E will move to infinity); or if there are large periods when companies are not generating earnings, use an earnings yield ratio (E/P)
- For macro data, attempt to use data series that remove monetary inflation if being compared to the relative performance of a stock. Almost every data series conveyed in a currency (such as the dollar value of retail sales or GDP) will have an inflation component, whereas most non-currency data (such as relative stock performance and P/E ratios) do not have this element. For data such as retail sales and GDP, the *nominal* number that is reported is the actual dollar amount spent, whereas the *real* number backs out the impact of inflation.
- Put data into its corresponding weekly, monthly or quarterly format so it can be charted

C. Chart the Data to Find Times of Out- or Under-performance

- The objective is to build a chart (preferably automated) to identify the specific time periods when:
  - An individual stock materially out- or under-performs its peers
  - A sector index materially out- or under-performs a broader index
- Chart each company to show how its stock performed relative to its peers and how its index performed relative to the broader market over an extended period of time (10 to 30 years if available). Measuring "performance" is the cumulative change going back to the beginning of the data series. If the stock (or sector index) has had a massive move (such as Apple's stock growing ten times over a relatively short period of time), the fluctuations in the older data in the series may be difficult to see, in which case it may be helpful to break down the series into two or more time periods.
- **Identify the periods where the stock substantially out- or under-performs the index and when the sector index substantially out- or under-performs a broad index. Look to see if the stock moves are unique or common across the sector.**

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Identify a Stock's Critical Factors

D. Identify Why Historical Anomalies Occurred for a Stock and Sector

The purpose of this step is to identify why a stock substantially out- or under-performed its peers and why a sector index out- or under-performed a broad index.

- To identify if material out- or under-performance is due to changes in consensus expectations (which is usually the case), overlay onto the company-specific and sector index relative performance charts above (which should be on one axis), a chart of the stock's forward consensus EPS or P/CF (on the other axis).
  - This will quickly identify those periods when the stock is clearly moving due to changes in growth expectations for EPS or CFPS – the key at this point will be to identify what caused the changed expectations.
  - Unfortunately, not all stock moves are driven by immediate changes in consensus expectations. Therefore, it's important also to investigate when a stock (or sector index) substantially out- or under-performs, and there are no (or minor) changes to consensus expectations.
- To quickly identify if relative performance is macro-related, create charts that overlay the stock's and sector index's relative performance onto key macro data, such as the type discussed above
- Identify the periods of the most significant out- and under-performance from the prior step
- After the initial conclusions are drawn from the charts above (the stock's relative performance influenced by changes in forward consensus EPS or CFPS expectations as well as macro factors), review the following published documents covering the time period when the anomaly occurred. (If the stock move occurred in January of a given year, and you are reviewing company filings, you will likely need to review those from the first quarter, which may not be published until May for that year – don't make a common mistake of looking at the documents filed in January, which are for the prior quarter):
  - The MD&A section of the company's regulatory filing
  - Quarterly call transcript
  - Financial news
  - Industry trade journals/blogs (trade journals often have a "year-end" wrap-up that might be the first place to look when researching longer-term trends)
  - Sell-side analysts' reports (for Buy-side analysts)
  - Internal documents written by you or colleagues following the stock at the time of a major stock move
- While reviewing these documents, record information that will be helpful in forecasting this factor's potential influence in the future, specifically:
  - The probability that this anomaly occurs in the future
  - The materiality this anomaly causes on the individual companies

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Identify a Stock's Critical Factors

Step 2: Explore Emerging Data & Documents ("E" of HELP™ Framework)

The purpose of this step is to identify current investment controversies that may potentially be critical factors but have not influenced the stock in the past

- Before speaking with market participants, look for potential current critical factors in the most recent version of the following documents:
  - The MD&A and risks sections of company regulatory filings (Use one of the services that show the specific items that have changed in the current regulatory filing vs. its immediate predecessor filing)
  - Transcripts and related material from recent company presentations
  - Trade journals/websites
  - Notes from a colleague(s) who have participated in recent company calls and meetings
  - Sell-side reports (for Buy-side analysts)
- From these documents, record information that could be helpful in forecasting:
  - The probability that this factor will impact the company during your investment time horizon
  - The materiality this factor would cause on the company
- Review a valuation comp table to:
  - Identify where there are discrepancies between each company's current valuation and its historical valuation
  - When a company is trading at a significant premium or discount to its peers, determine the cause (It may be due to an impending change to a critical factor)
- Review a full range of sell-side earnings estimates to identify where earnings or cash flow expectations are the widest (Critical factors are often the cause when there is a large dispersion among sell-side estimates)

Step 3: Validate/Refute Assumptions with Live Sources ("L" of HELP™ Framework)

Contact live information sources to get clarity on your list of historical and emerging factors by specifically answering these questions:

- Would changes in consensus expectations **E**xceed my materiality threshold *if* this factor were to occur during my investment time horizon?
- Is there a high **P**robability that this factor will become much more certain to occur (or deviate materially from the expected trend) during my investment time horizon?
- Could **I** accurately forecast this factor and its catalyst with a moderate amount of research? (Do you have everything you need to reliably forecast this factor?)
- Will **C**onsensus be poor at accurately forecasting (or spotting) this factor?

When the answer is "yes" to all, it is likely a critical factor that can add alpha.

If possible, begin this step by rank ordering the list of historical factors (from Step 1 above) by the magnitude of impact on the stock's performance. To get clarity around the four EPIC™ questions, speak with the information sources that were closely involved with the stock or sector at the time when the prior anomalies occurred, with the goal of confirming or refuting the critical factor that appeared to have caused the anomaly. Some of the best information sources for explaining historical

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anomalies can be found in Exhibit 1 below (see the column labeled "Confirm or Refute Historical Factors").

Speak with the information sources that are currently closely involved with the stock or sector as found in Exhibit 1 below (see the column in the table below labeled "Assess New or Emerging Critical Factors"), with the goal of answering the four EPIC™ questions for your list of potential critical factors. Specifically, attempt to put parameters around the future *materiality* and *probability* of each factor. Also, speak with market participants to assess the market psychology to determine if the factor is currently being correctly assessed in the consensus expectations (see the column labeled "Assess Market Psychology").

If you have time, meet/speak with company management to:

- Understand if it is aware of those items on your list of potential critical factors; and
- Determine if management has a plan to exploit benefits or mitigate risks of potential critical factors

Step 4: Prioritize Factors Using EPIC™ Framework ("P" of HELP™ Framework)

- Create a table that allows you to rank-order all of your factors on the four elements of the EPIC™ framework, as shown in Exhibit 2 below. Add up the score of each row in the right-most column
- You may want to put more weight on the first two factors because they often are the most important
- If you have trouble assessing a ranking for a factor, and it's probable the factor could rise to the top if you get clarity, it's probably a place to spend additional research time
- **Once you feel comfortable with your ranked list, spend your alpha-generating research time on those items at the top of the list, which are critical factors, and disregard or spend minimal time on all of the other items. (The second part is the most difficult to do and the one that will save you the most time.)**
- Add to the list and re-rank on a regular basis (monthly to quarterly) because the importance of some factors will change over time

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Identify a Stock's Critical Factors

Exhibit 1: Helpful Live Information Sources

Source for Information	Pros	Cons	Confirm or Refute Historical Factors*	Assess New or Emerging Critical Factors	Assess Market Psych.
Buy-side analyst or portfolio manager (as a source for buy-side or sell-side)	Best place to gauge investor expectations	May not be representative of the larger investor base	□		■
Company's competitor (publicly traded or privately held)	Knows the sector and the competitive dynamics	May not be familiar enough with other company's factors to speak with authority. May try to bash the competition	■	■	
Company executives (including investor relations)	Usually forthcoming about opportunistic factors	Usually downplay or ignore potentially negative factors	□	□	□
Conference speaker or author of book/academic paper	Usually willing to speak with others	May not fully understand implications for company or stock			
Consultant, expert, or company retiree	Very close to the issue	Can be difficult to find	■	■	
Customer of, or supplier to, the company (publicly traded or privately held)	First-hand knowledge of the company's value proposition	Contact may not be representative of the larger customer base	□	□	
Government officials or staffers	Often the closest to regulatory or legislative changes	Often won't speak on the topic. If so, may not provide an accurate forecast	□	□	
Industry association or forecasting service representative	Understands complex industry issues	May be biased in the sector's favor and may not fully understand the implications for the company or stock	□	□	
Industry journalist/blogger	May understand complex issues and provide direction to other sources of information	May not fully understand implications for company or stock	■	■	
Sell-side analyst (for the buy-side) considered among top 3 in the sector	May be the only place to gauge consensus thinking and obtain proprietary research	Subjectivity or low-quality work can result in incorrect output	■	■	■
Sell-side salesperson (with deep knowledge of specific stock)	Close to many buy-side investors	Generalist salespeople may not have a full understanding of any single stock	□		□
Trader of stock (with deep knowledge of specific stock)	Usually familiar with the short-term psychology of the stock	May not fully understand the company or long-term issues	□		□

Legend: ■ = best first source, □ = good source

* Source must have been active with the stock/company at the time of historical anomaly

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Identify a Stock's Critical Factors

Exhibit 2: Example Table of Rank-Ordered Factors (for FDX in 2006)

Factor to Potentially Be Researched	If this factor were to occur or change from trend, it would cause changes in consensus expectations to **E**xceed my materiality threshold	This factor will **P**robably deviate materially from consensus expectations during my investment time horizon	Based on my research on the factor, **I**'m good at forecasting this factor and its catalyst (it's not just a guess)	The overall **C**onsensus will be poor at accurately forecasting or spotting an anomaly for this factor	Total
Cost management/ productivity/ improved network efficiency	5	4	4	5	18
Level of fuel surcharge collected	5	4	4	4	17
Acquisition(s)	5	3	2	5	15
Ground package volume growth	3	4	4	4	15
Domestic Express package pricing/yield	4	3	4	3	14
Ground package pricing/yield	4	3	3	4	14
International Priority package pricing/yield	3	4	3	4	14
International Priority package volume growth	2	4	4	4	14
Service levels other than during the holiday season	3	2	4	5	14
Change in senior management	5	2	2	4	13
Electronic documents reducing need for overnight envelopes	2	4	3	4	13
GDP growth	5	3	2	3	13
Labor cost trends	3	3	3	4	13
Service levels at holiday season	2	2	3	5	12
Domestic Express package volume growth	2	3	4	3	12
Asia-Pacific volume growth	2	3	4	2	11
Change in level of tech shippers vs. non-tech shippers	4	2	3	2	11
Purchase of new aircraft	1	3	3	4	11
Depreciation rate	1	2	2	4	9
Level of major weather disruptions	1	3	2	2	8

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Identify a Stock's Critical Factors

Exhibit 3: Example Table of Critical Factors for Select Stocks (as of early 2015)

Sector or Stock	Critical Factor	Assumption #1	Assumption #2
Amazon.com	Market share shift from traditional retailers	Adoption rate of e-commerce within emerging markets	Adoption rate of mobile apps for retail purchases
IBM	Migration to cloud-based solutions	Rate of growth of cloud-based enterprise applications	Level of security offered in the cloud vs. in-house options
Nike	Top line growth rate keeping up with historical trends	Changes in demand from international markets	Changes in broad athletic activities
NVIDIA (graphics tech)	Growth of virtual reality as mainstream product	Adoption of virtual reality by mass markets	Cost to produce high-quality virtual reality devices that can be used in the home
The Gap	Apparel pricing deflation	Adoption of off-price and low-price fashion	Use of mobile devices for price discovery
T-Mobile	Competitive pricing among the wireless carriers	Timing when domestic smartphone becomes saturated	Changing regulations
VMware (software)	Growth of Open Source software vs. traditional vendors	Open Source providers going public	IT leaders selling services that rely on Open Source solutions
Walgreens (drug retailer)	Generic drug price inflation	Changes in FDA regulation of non-generic drug manufacturers	Distribution channel consolidation
WMT	Wage inflation	Level at which other competitors raise minimum wage	Efficiency gains by reducing employee turnover

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You are exposed to a new piece of information that could impact a stock within your assigned universe

Would changes in consensus expectations **E**xceed my materiality threshold if this factor were to occur during my investment time horizon?

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Yes

No

Not Sure

Is there a high **P**robability this factor will become much more certain to occur during my investment time horizon?

Yes

No

Am **I** good at forecasting this factor and its catalyst?

Yes

No

Will **C**onsensus be poor at accurately forecasting (or spotting) this factor?

Yes

No

Could I forecast this better than consensus with additional research?

Yes

No

Minimize research on factor

Likely critical factor that will generate alpha if forecast correctly

Weigh the cost vs. benefit of spending more research time on the factor

Can it be quantified on the financial statements?

Yes, or maybe

No

Unit volume or transactions

Pricing

Costs (including borrowing costs and tax rate)

Shares outstanding

Returns or capital levels required to run the business

Identify potential impact zone on financial statements

Compute a "Quick Check" to see if factor could approach your "materiality" threshold ("magic number")

Is the factor likely to cause EPS or CFPS to exceed my materiality threshold?

No

Not Sure

Yes

Determine if it has any of these impacts that cannot be quantified on the financial statements

Is the factor likely to cause the stock to move beyond my materiality threshold?

No

Not Sure

Yes

Cause enough change to the risk profile or volatility of the stock to move the stock beyond my materiality threshold?

Identify how the factor would change the volatility of future earnings or cash flow

Cause a change in management that would result in stock moving by more than my threshold?

Identify the premium or discount currently in the stock's valuation for existing management talent, compared to its peers

Cause a change in the likelihood the company is acquired?

Identify historical acquisition premiums for the sector

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