Gyrfalcon Agricultural Analytics Platform (B)

From: Jordan McGill, SVP of Gyrfalcon Ventures

To: GWU Intern Class

Sent: Tuesday, February 9th, 8:00am

Subject: Re: Recommendations for Gyrfalcon Ventures

Interns, I know you've been hard at work, digging into Gyrfalcon Ventures, and I look forward to seeing your recommendations soon. Now that we have made the decision to launch GAAP, we need a more detailed strategy for doing so successfully.

As I mentioned in my first memo, a variety of factors are likely to drive an assessment of which markets are most attractive to us: In addition to overall market size and scale of farms, it's still our belief that crop and land types, user capabilities, economics, infrastructures, and the political and legal environments all matter. Geographic distance also might be a factor, but provided a market is otherwise attractive, and easily accessible and manageable, nowhere on the planet is off-limits.

Some Data to Get You Started

With such a big world of potential markets to research, we asked our analysts to gather a few things that might accelerate your work. They've compiled some data that may prove useful (**Exhibit 2 & 3 below** contain excerpts, and some of their notes).

It's a lot to sift through, so we're counting on your strong analytical abilities to determine which of these metrics might be relevant – and whether other metrics should be added, via your additional research.

And of course, you'll need to draw conclusions *across* multiple measures of market attractiveness. That is, it seems unlikely that any one country will score the best on *all* the metrics you deem best. So we'll be making tradeoffs, looking for markets that *overall* perform well. Of course, not all the factors are equally important – and to make things even more complicated, there's considerable disagreement within our senior management team about which factors to emphasize.

For example, some have suggested that we should simply target the countries with the most agricultural land, and get on with it. I strongly disagree – in the time frame we're talking about, we will never be able to exploit 100% of, say, Brazil's *potential* as a market. So its vastness is almost irrelevant, in this sense: once a country gets beyond a certain size, incremental acres under cultivation have less value for us. You might say there is a diminishing marginal value of size. Or it might just be that other factors need to be weighted more heavily than pure size.

You'll notice that one metric in the data is a predicted performance index (PERF). We have a potential partner: a company in a complementary sector of precision agriculture, one that is open to letting us leverage their sales and distribution network in one of these countries, as a pilot program. They've generously allowed us to analyze their "performance" data for a variety of countries (although you'll notice that they've held back values for a few countries, including a potentially attractive targets, such as Brazil). Their algorithm is proprietary, so we aren't exactly sure what it represents. We don't even know what factors drive it, or how well their factors align with ours, or how much weight they placed on them. However, it could be a *very* useful bit of analysis we can piggyback on! Worth exploring.

I've also included some initial financial assumptions that may be useful in your analysis **(Exhibit 1)**. However, our financial team will work out the numbers once you identify a market.

Expectations at Board Meeting

The leadership team is looking forward to hearing your recommendations. You'll have about 15 minutes on the Board Meeting agenda in which to present to our executive suite, including Connor Tanis, our CFO. As I mentioned in that first memo, do make sure you can justify your recommendations, and please state all of your assumptions.

Don't hesitate to do additional research, as necessary, and remember: The leadership is ready to move forward, and they're looking to make a decision based on your recommendation. Our team will respond best to a clear storyline, and evidence-based recommendations grounded in high-quality analysis.

Thanks again for your help with this. We are so glad to have you on the team to "figure this out."

Exhibit 1. Financial Information

Financial Category		Value	Additional Information
Revenue	Market Size	TBD	
	Market Capture	TBD	
	Price Point	TBD	Consider comparable products? [a]
Expense	Variable Costs	$100 USD	Per unit
	Overhead	10%	Percentage of total revenue
	Salaries	15%	Percentage of total revenue
	Shipping Costs	TBD	
	Marketing & Other	TBD	Any additional incidentals required
	Partner Sales & Distribution	10%	Percentage of total revenue
	Fixed Costs	TBD	Anticipate the need for small office space initially. Minimum 300 – 500 square meters.
Corporate Information	WACC	8%	Connor assures us this is the best rate to use for this opportunity.
	Tax Rate	35%	Assume repatriation of profits to the U.S. (consider exchange rates).

All estimates are for year 1 financial projections
[a] *Note: Gyrfalcon Ventures does not sell drones, just the add-on system: sensors, analytic software & other hardware*

Exhibit 2. Excerpt of On-Hand Data *(Gyrfalcon Data Bank.xlsx)*

Analysts' notes:

- Key to variables attached separately (see Exhibit 2)
- The list of countries is pretty extensive – but not exhaustive.
- Some values of the Performance Index are missing; they were not provided by the potential partner who developed the index.
- Some values of the other variables also were not available and appear as blanks cells.

	A	B	C	D	E	F	G	H	I	J	K
1	COUNTRY	CTRY	PERF	LAND	AGLAND	AGLAND-PC	LOGLAND	LOGAGLAND	CROPX	AGVAL	AGVAL
2	Argentina	ARG	13.73	2,737	1,492	55	3.44	3.17	126.0	18,069	
3	Australia	AUS	14.54	7,682	3,966	52	3.89	3.60	128.8	23,078	
4	Austria	AUT	10.12	83	32	38	1.92	1.50	96.0	4,358	
5	Belarus	BLR	10.79	203	87	43	2.31	1.94	96.0	3,600	
6	Belgium	BEL	9.28	30	13	44	1.48	1.13	94.8	3,129	
7	Brazil	BRA		8,358	2,788	33	3.92	3.45	140.3	55,129	5
8	Bulgaria	BGR	10.15	109	50	46	2.04	1.70	128.6	1,742	
9	Canada	CAN		9,094	653	7	3.96	2.81	142.4		
10	Chile	CHL	11.46	744	158	21	2.87	2.20	117.2	6,299	
11	China	CHN	14.91	9,388	5,146	55	3.97	3.71	133.6	386,794	
12	Colombia	COL	12.21	1,110	448	40	3.05	2.65	108.2	13,634	6
13	Costa Rica	CRI	9.40	51	18	36	1.71	1.26	121.9	2,119	
14	Dominican Republic	DOM	9.69	48	24	49	1.68	1.37	147.9	3,495	6
15	Ecuador	ECU	10.49	248	75	30	2.40	1.88	103.7	5,247	
16	Egypt, Arab Rep.	EGY	9.84	995	38	4	3.00	1.58	114.1	16,612	1
17	Ethiopia	ETH	12.05	1,000	363	36	3.00	2.56	156.8	9,624	4

Exhibit 3. Excerpt of Variable Key *(Gyrfalcon Data Bank.xlsx)*

Analysts' notes:

- The complete variable key (in the spreadsheet file) also includes columns with more detailed explanations of what each variable means, as well as the source code and year.
- In some preliminary analysis we noted that the *ranges* of some variables are so wide – for example, LAND and AGLAND – that we ended up using log-transformed versions of those variables. Of course you could reconstruct them – and do the same for other variables, using formulas in Excel – but because we already had them, we've included them for you here.
- While playing around with some weighted averages of some of the metrics, we recognized that the units are so different that we needed more comparable scales. We created index variables (set the maximum value = 1.00) and included those as well. (They make a lot more sense for some variables than others. For example, the Ease of Doing Business variable is a ranking, which means the *lowest* value, #1, is *best*, so some other approach is probably needed.)

Variable	Short Explanation	Source
COUNTRY	Country Name	
CTRY	Country Abbreviation	
PERF	Partner Performance Indicator	Potential Partner
LAND	Land area (sq. km, thousands)	World Bank
AGLAND	Agricultural land (sq. km, thousands)	World Bank
AGLAND-PC	Agricultural land (% of land area)	World Bank
LOGLAND	*transformed LAND, using Log10*	
LOGAGLAND	*transformed AGLAND, using Log10*	
CROPX	Crop production index (2004-2006 = 100)	World Bank
AGVAL	Agriculture, value added (constant 2005 US$ millions)	World Bank
AGVAL-PC	Agriculture, value added (% of GDP)	World Bank
AGVAL-GR	Agriculture, value added (annual % growth)	World Bank
AGEMP	Employment in agriculture (% of total employment)	World Bank
ELEC-PC	Access to electricity, rural (% of rural population)	World Bank
CORRX	Corruption Perception Index	Euromonitor
EASE-RK	Ease of Doing Business Ranking	Euromonitor
GDPCAP	GDP Per Capita PPP (International Dollars)	Euromonitor
INFL	Inflation (% Growth)	Euromonitor
PPPX	National price level	World Bank
XRATE	Official exchange rate (LCU per US$, period average)	World Bank
I-COUNTRY	*Indexed COUNTRY (percent of max value)*	
I-CTRY	*Indexed CTRY (percent of max value)*	
I-PERF	*Indexed PERF (percent of max value)*	
I-LAND	*Indexed LAND (percent of max value)*	
I-AGLAND	*Indexed AGLAND (percent of max value)*	
I-AGLAND-PC	*Indexed AGLAND-PC (percent of max value)*	
I-LOGLAND	*Indexed LOGLAND (percent of max value)*	
I-LOGAGLAND	*Indexed LOGAGLAND (percent of max value)*	
I-CROPX	*Indexed CROPX (percent of max value)*	
I-AGVAL	*Indexed AGVAL (percent of max value)*	
I-AGVAL-PC	*Indexed AGVAL-PC (percent of max value)*	
I-AGVAL-GR	*Indexed AGVAL-GR (percent of max value)*	
I-AGEMP	*Indexed AGEMP (percent of max value)*	
I-ELEC-PC	*Indexed ELEC-PC (percent of max value)*	
I-CORRX	*Indexed CORRX (percent of max value)*	
I-EASE-RK	*Indexed EASE-RK (percent of max value)*	
I-GDPCAP	*Indexed GDPCAP (percent of max value)*	
I-INFL	*Indexed INFL (percent of max value)*	
I-PPPX	*Indexed PPPX (percent of max value)*	
I-XRATE	*Indexed XRATE (percent of max value)*	