



Creating forest sector solutions

www.fpinnovations.ca



DiagFor

A tool for
continuous
improvement for
forest contractors

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COFE 2008 meeting

DiagFor presentation

- Context
- What is DiagFor
- Benefits
- Continuous improvement & performance levels
- 8 management responsibilities
- Report card & action plans
- FAQ & Suggestions for implementations
- Demo



DiagFor

Context

- Over the years, forest contractors have grown from owning a cable skidder to million-dollar businesses
- Strength: operate and repair equipment
- Weaknesses: manage people, track performance, manage financial aspects



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Context

- Pressure is constant to improve efficiency and productivity
- Few dedicated tools for forest contractors
- In Canada, forest contractors are increasingly perceived as business partners of the forest companies



DiagFor

What is DIAG-FOR?

- **DIAG**nostic for **FOR**est contractors
- Tool developed by the FERIC division of FPInnovations at the request of a large forest company
- Officially released April 1st, 2008
 - Assessment and benchmarking tool
 - Performance tracking tool
 - Continuous improvement tool



DiagFor

What is DIAG-FOR?

- Internet-based questionnaire
- Series of yes/no questions self-administered or through an interview process
- 8 responsibilities * 5 performance levels * 4 questions/level
- DiagFor provides a score card (performance level for each responsibility assessed)
- DiagFor provides an action plan with recommendations for improvement



DiagFor

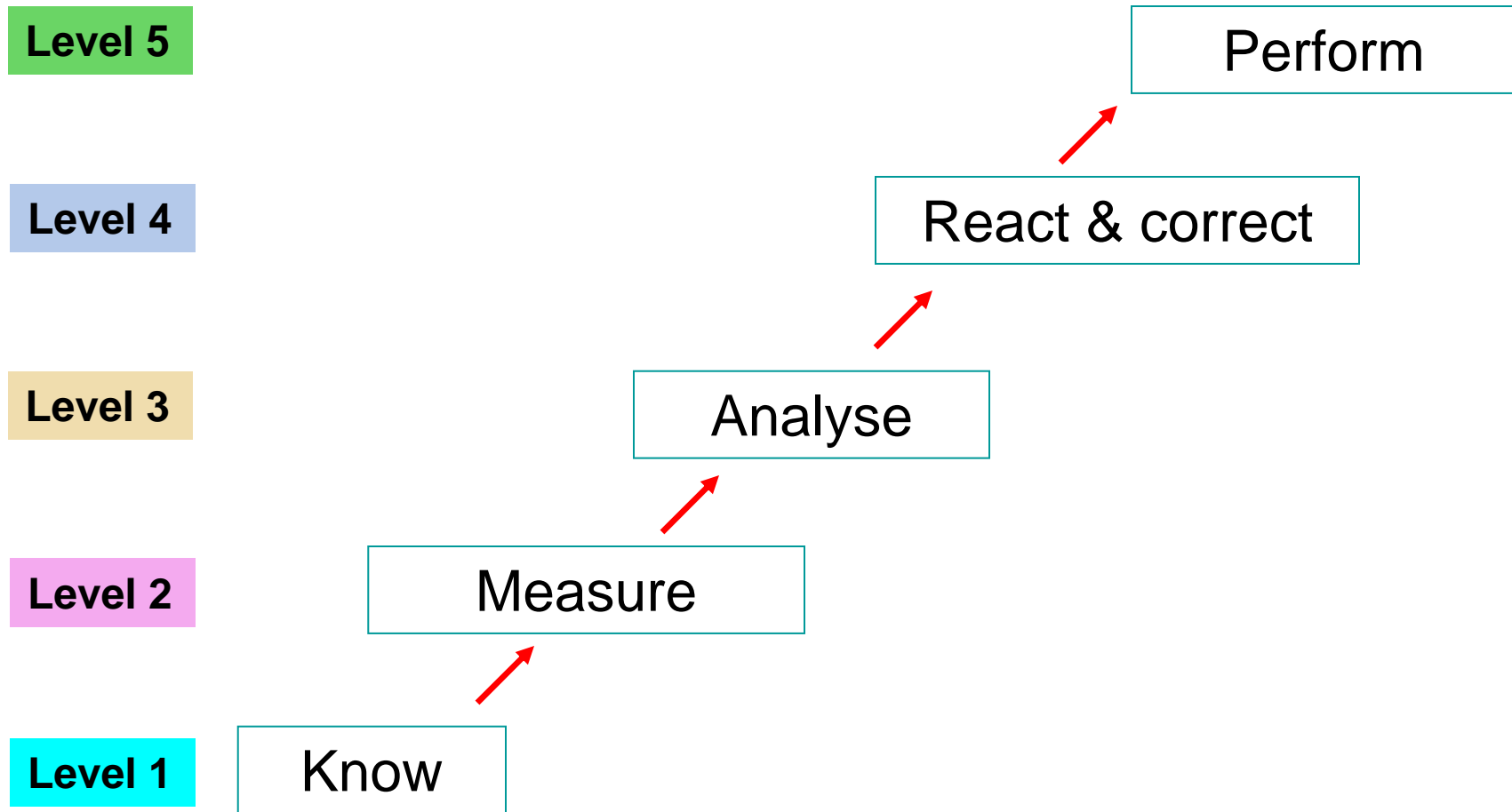
Benefits of DiagFor

- **For contractors:**
 - Provides a good idea of performance level as compared to industry averages
 - Suggests recommendations for improving performance and profitability
 - Facilitates establishing a continuous improvement program
- **For companies:**
 - Provides assistance to improve contractor performance and efficiency, and thus reduces the pressure on rate increases
 - Provides a tool for cooperative continuous improvement
 - Promotes partnerships with contractors

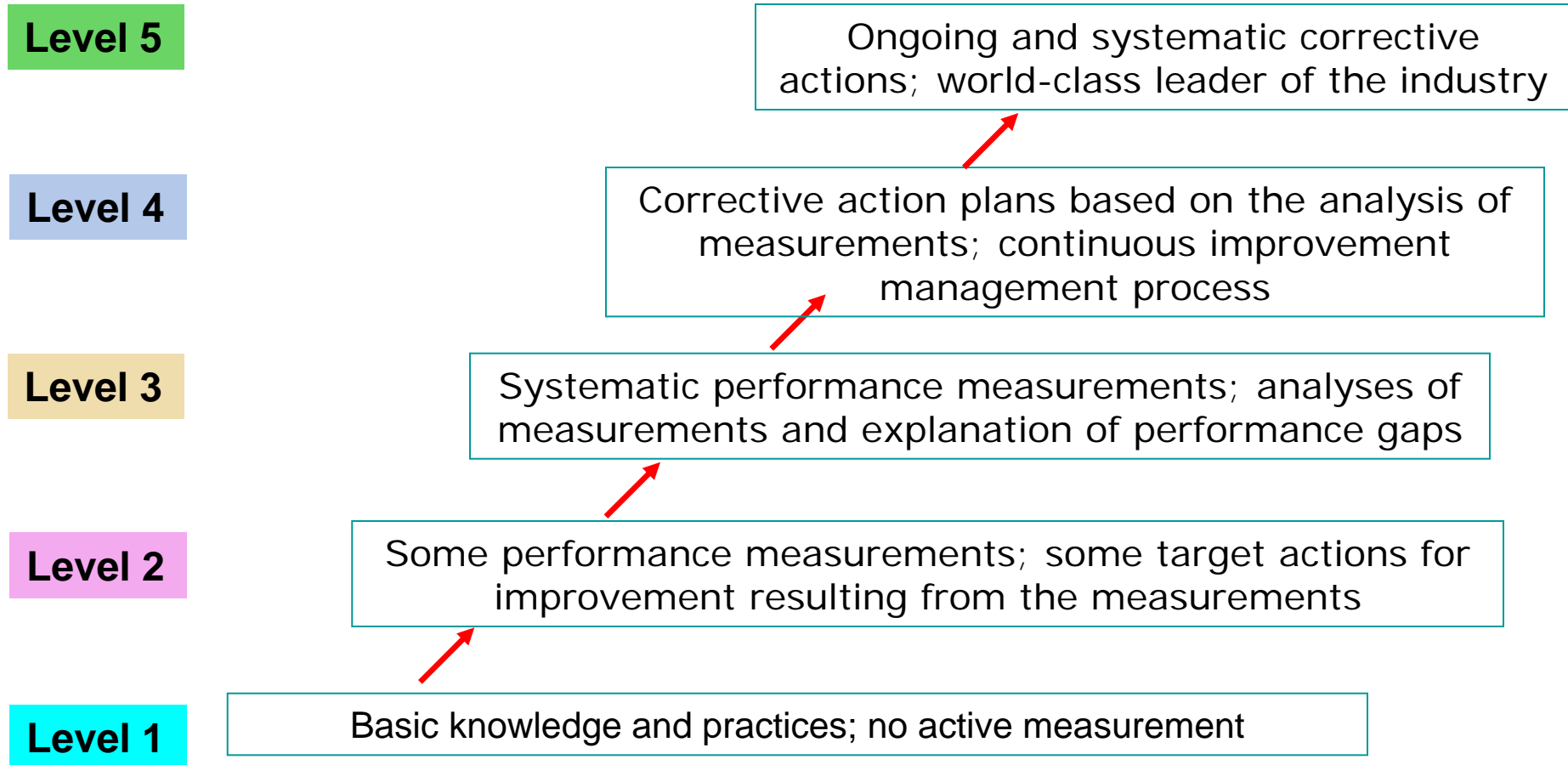


DiagFor

Continuous improvement implementation



Continuous improvement implementation

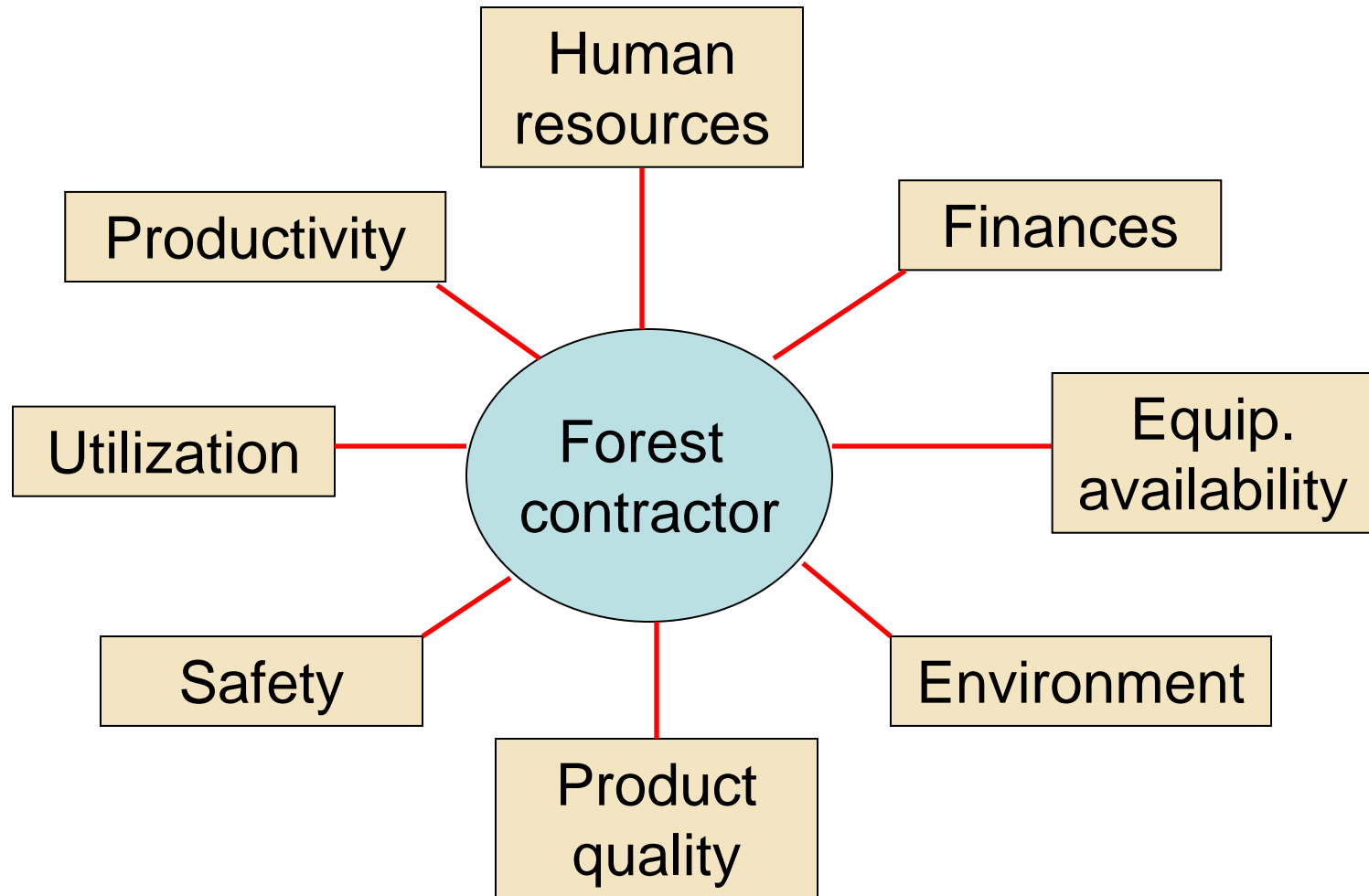


Example of level progression with questions (Equipment productivity)

- **Level 1: Do you know the productivity of your machines?**
- **Level 2: Do you measure the productivity of your equipment on a continuous basis?**
- **Level 3: Do you frequently analyze the productivity of your equipment to help you meet your productivity objectives?**
- **Level 4: When productivity is lower than your objectives, do you propose a concrete action plan to close the gap (including determining the causes to prevent the problem from recurring)?**
- **Level 5: Are the productivities of your equipment always at least 50% greater than those of other contractors in your region?**



Eight management responsibilities of forest contractors



Human Resources

« Provide human resource management that will ensure personal development and partnership »

DiagFor questions:

- **Employee evaluation process**
- **Employee involvement**
- **Employee training**
- **Coaching**



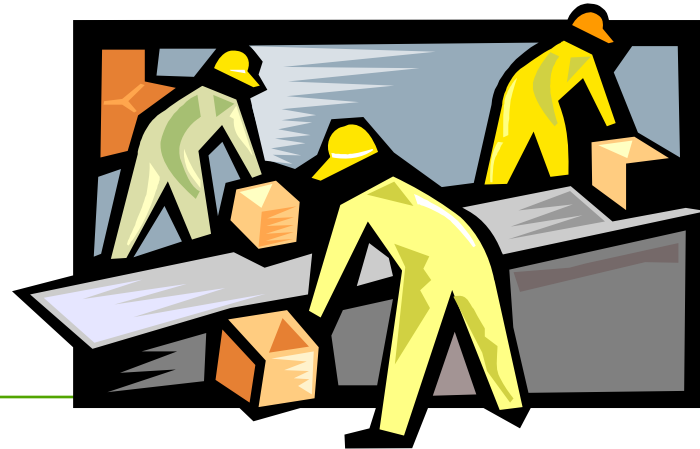
DiagFor

Equipment productivity

« Maximize the hourly productivity of all machines (output/productive time), e.g. m³/PMH »

DiagFor questions:

- Measuring productivity / operators
- Effect of operating conditions
- Benchmarking & external expertise
- Best techniques



DiagFor

Mechanical availability of equipment

« Ensure maximum availability of equipment by proper service and maintenance practices »

DiagFor questions:

- **Service and maintenance infrastructure**
- **Maintenance strategies**
- **Record keeping**
- **Measuring key performance indicators**
- **Preventive & predictive maintenance**



Utilization rate

«Ensure that the maximum number of productive hours is achieved during the work schedule by proper organization of his operations (PMH/SMH) »

DiagFor questions:

- **Measuring productive time**
- **Measuring unproductive time & causes**
- **Action plans and corrective actions**



Product quality

«Ensure consistent and high quality of the products and the satisfaction of his customers »

DiagFor questions:

- **Defined quality criteria**
- **Monitoring & measuring gaps**
- **Tracking & understanding variations over time**
- **Corrective actions**

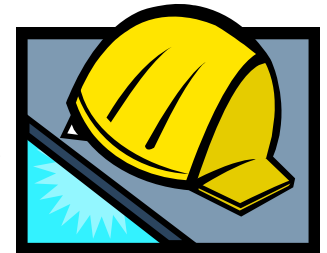


Health & Safety

«Ensure that all health and safety objectives are met by the rigorous use of best practices »

DiagFor questions:

- **Following policies & best practices**
- **Pro-active monitoring & audits**
- **Going beyond the requirements**



Environment protection

«Ensure that all environmental protection objectives are met by the rigorous use of best practices »

DiagFor questions:

- **Policies & procedures**
- **Pro-active monitoring & reporting**
- **Innovative practices**



Financial aspects

« Ensure the proper financial management of the business through control of fixed and variable costs »

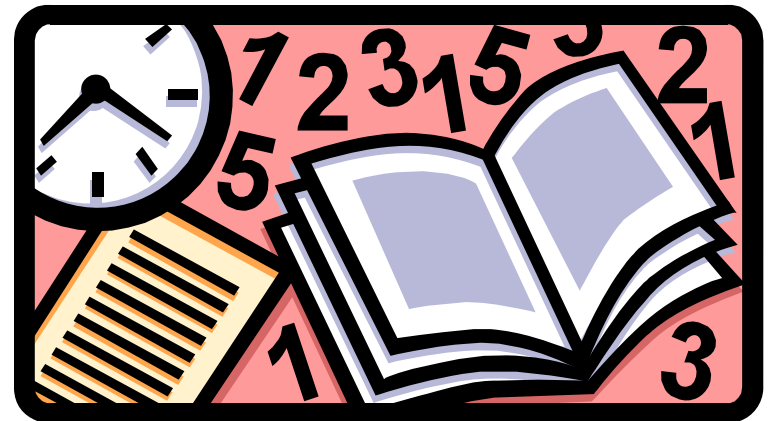
DiagFor questions:

- **Understanding financial indicators**
- **Budgeting**
- **Expenditure tracking & monitoring**
- **Parts inventory**



Report card & Action plan

- Report includes a summary of performance
- Report includes a series of recommended actions to improve and attain the next level up
- Report includes hyperlinks to web site providing tools, further information or software downloads
- Report can be printed



Level 1

You do the minimum required to ensure that your machines remain in operating condition. You could undoubtedly obtain additional productive hours per week by improving your maintenance practices. Since you cannot improve what you don't measure, the first step is to measure the time spent on maintenance and repairs.

Means of improvement:

- Measure the duration of your down-time (as simply as using your watch and a notebook on the machine, using a card-based recorder of operating time, or even using a datalogger such as FPInnovations – Feric's [MultiDAT](#) to record productive time.
- Create a **written** list of routine maintenance and preventative tasks to perform for each machine as a function of their number of hours of operation.
- Create an operator or mechanic report form that your workers can use to record the repairs that have been performed on each machine, including the duration of the repair and the parts that were repaired or replaced.
- Consult the CD "[Maintenance strategies for contractors](#)", available from FPInnovations – Feric. This CD covers the following subjects:
 - Purchasing the right machine
 - Planning your maintenance
 - Buying the parts and tools that are required
 - Solving problems the first time
 - Not repairing what you should replace
 - Improving your machine
 - Training your team
 - Keeping good records

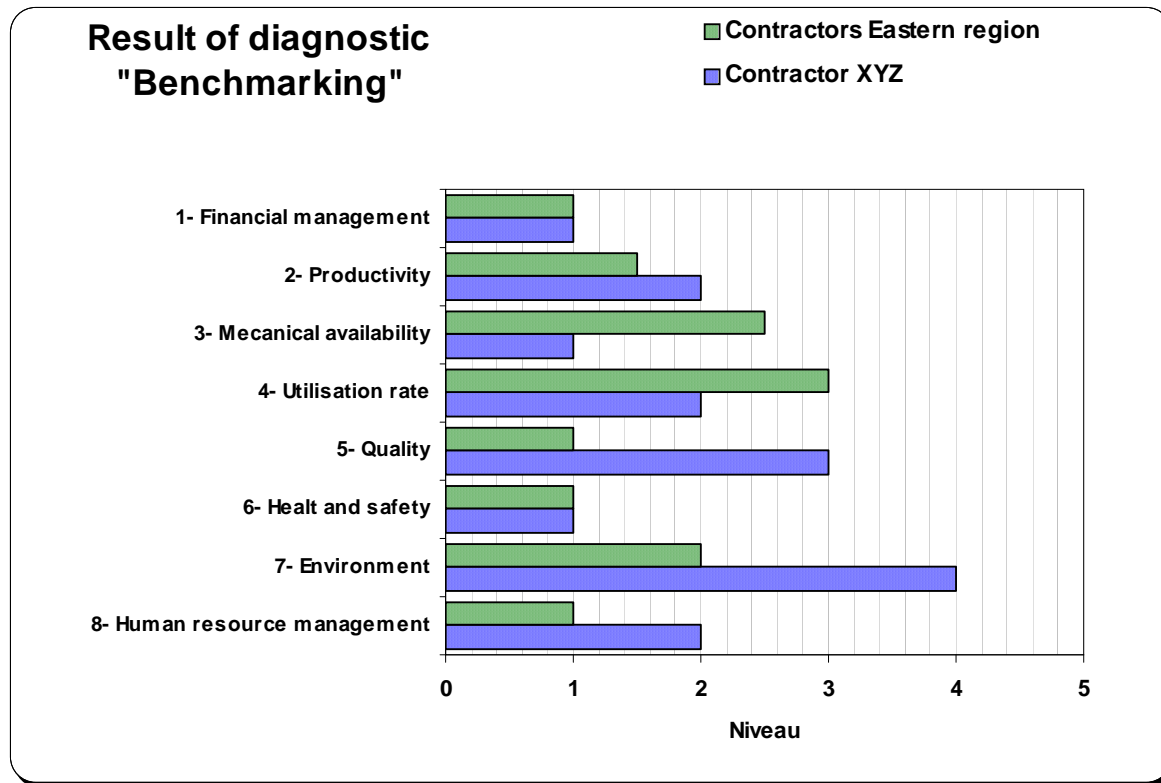
Recommendations

Report Card

Hyperlinks

Benchmark

- Compare your results against industry averages (in construction)



FAQ

- **Is the tool free?**
 - YES, just go directly to the web site and log-in
- **Will my information remain confidential?**
 - YES, although you can agree to share the information with your client; however Feric is the only one with access to the data
- **Will the questions remain the same from one year to the next?**
 - YES, this way it will be possible to track year-to-year progress
- **Can I get a paper copy of the questions?**
 - YES, in this way you can see all the questions, but you will need eventually to input into the tool on the web to get the reports



Suggestions for implementation within forest companies

- Use it in partnership with contractors
- Meet with contractors individually and go through questionnaire together (value in discussion)
- Agree on points needing improvements
- Review proposed DiagFor action plan suggestions and select those that are relevant
- Repeat periodically to check improvement



Current users of the tool

- NewPage Port Hawkesbury Ltd
- AbitibiBowater Inc.
- Tembec Inc.
- Miscellaneous individual contractors



Where to find it

Web site: <http://www.diagfor.com>

For comments or problems:

E-mail: webmaster@diagfor.com



DiagFor



DiagFor

MAIN MENU

Welcome *jfgingras!*

[Logout](#)

MY DIAGNOSTIC

Click the name of the responsibility for which you want to answer the questions.

Responsability	Score	Wrapup	Reset
Human resources	1	Wrapup	Reset
Productivity	2	Wrapup	Reset
Mechanical availability	1	Wrapup	Reset
Utilization rate	Entry level	Wrapup	Reset
Quality	1	Wrapup	Reset
Health, safety	1	Wrapup	Reset
Environment	3	Wrapup	Reset
Financial management	1	Wrapup	Reset

OTHER OPTIONS

- [My Profile](#)
- [Paper format diagnostic \(printed questions\)](#)
- [Privacy policy](#)

Demo of system

Resp. 3 – managing equipment availability



DiagFor

Level 1



Level not completed

Do you have a service truck that carries an adequate parts inventory and tools at all times on your operation?

YES

NO

Is someone on your team (including you) capable of performing most mechanical repairs to you equipment?

YES

NO

Are the parts and tools in your service truck easily accessible to everyone?

YES

NO

Is the majority of down-time spent performing maintenance and service work instead of repairs?

YES

NO

! [Display extra information...](#)

<< Previous level

Save and return to menu

Next level >>

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Demo of system

Resp. 3 – managing equipment availability



DiagFor

Additional information available

Level 1



Level not completed

Do you have a service truck that carries an adequate parts inventory and tools at all times on your operation?

YES

NO

Is someone on your team (including you) capable of performing most mechanical repairs to you equipment?

YES

NO

Are the parts and tools in your service truck easily accessible to everyone?

YES

NO

Is the majority of down-time spent performing maintenance and service work instead of repairs?

YES

NO

! [Close extra information...](#)

In other words, is more than half of the time spent by your mechanics devoted to routine maintenance (greasing, preventative replacement of parts, inspections, etc.) rather than repairing damaged parts?

<< Previous level

Save and return to menu

Next level >>

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Demo of system


Resp. 3 – managing equipment availability





DiagFor


Level 1 
Level successful

Do you have a service truck that carries an adequate parts inventory and tools at all times on your operation?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Is someone on your team (including you) capable of performing most mechanical repairs to your equipment?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Are the parts and tools in your service truck easily accessible to everyone?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Is the majority of down-time spent performing maintenance and service work instead of repairs?	<input checked="" type="radio"/> YES	<input type="radio"/> NO

 [Display extra information...](#) 44





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Demo of system



Resp. 3 – managing equipment availability



DiagFor

Level 2 ★
Level not completed

Do you measure the duration of all of your down-time on all of your equipment? ! Display extra information...	<input type="radio"/> YES <input type="radio"/> NO
Have you created a written list of maintenance work to plan and perform? ! Display extra information...	<input type="radio"/> YES <input type="radio"/> NO
Do you obtain written reports from the operator or mechanic on any maintenance work or on any repairs that were done?	<input type="radio"/> YES <input type="radio"/> NO
Does each part and tool have its own place in your service truck?	<input type="radio"/> YES <input type="radio"/> NO





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Demo of system

Resp. 3 – managing equipment availability



DiagFor

Level 2



Level not completed

Do you measure the duration of all of your down-time on all of your equipment?

YES NO

! [Display extra information...](#)

Have you created a written list of maintenance work to plan and perform?

YES NO

! [Close extra information...](#)

For example, with a written list, you can anticipate which parts or which supplies must be available beforehand. You can also plan this work to minimize unproductive travel by your machines.

Do you obtain written reports from the operator or mechanic on any maintenance work or on any repairs that were done?

YES NO

Does each part and tool have its own place in your service truck?

YES NO

<< Previous level

Save and return to menu

Next level >>

Demo of system

Resp. 3 – managing equipment availability



DiagFor

Level 2



Level not successful

Do you measure the duration of all of your down-time on all of your equipment?

YES

NO

[Display extra information...](#)

Have you created a written list of maintenance work to plan and perform?

YES

NO

[Close extra information...](#)

For example, with a written list, you can anticipate which parts or which supplies must be available beforehand. You can also plan this work to minimize unproductive travel by your machines.

Do you obtain written reports from the operator or mechanic on any maintenance work or on any repairs that were done?

YES

NO

Does each part and tool have its own place in your service truck?

YES

NO

<< Previous level

Save and return to menu

Next level >>

Demo of system

Resp. 3 – managing equipment availability

DiagFor - Microsoft Internet Explorer

Fichier Edition Affichage Favoris Outils ?

Précédente Rechercher Favoris

Adresse <http://fpinnovations.diagfor.com/diagnostic/Resp.aspx?ID=3> OK

DiagFor

Level 5 *Level not completed*

Do you analyze historical records for your maintenance work and for previous breakdowns as a tool to help you predict, and thus prevent, mechanical breakdowns (preventative maintenance)? YES NO

During the past year, have your preventative maintenance system and your parts management system let you attain a mechanical availability for your equipment that systematically exceeds 95% on a monthly basis? YES NO

Have you continually improved your indicators of mechanical availability (MTBF and MTTR) over the past 5 years? YES NO

[Display extra information...](#)

Are all the replacement parts that you use systematically verified, adjusted, and calibrated (if required) beforehand to ensure that they will function perfectly when you restart the machine (a Total Productive Maintenance (TPM) approach)? YES NO

[Display extra information...](#)

<< Previous level Save and return to menu Next level >>

FPInnovations abitibi bowater Internet

Terminé

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Thank you!

Web site: <http://www.diagfor.com>

For comments or problems:

E-mail: webmaster@diagfor.com



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